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THYROID DEFICIENCY—A CLINICAL STUDY.*

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Much has been written on myxedema and cretinism, comparatively little on hypothyroidism or thyroid deficiency. We are urged to make an early diagnosis of cancer and tuberculosis, if we hope for a cure; why not of the diseases of thyroid also,—to be sure, there is an early or incipient stage.

I became very much interested in the subject about a year ago. I noticed that many cases coming up for examination complained of a tired, worn-out feeling, loss of strength, under-weight and nervousness, on which no definite pathology could be found to account for the symptoms. About the same time, I noticed in our laboratory records we were getting many low metabolic readings, so I decided to study a large series.

From January first, 1929, until October first, inclusive, 252 metabolisms were done on 200 patients, of which 154 had a basal rate of minus 5 or lower. I selected fifty cases of this group for study, thirty of my own, fifteen of Dr. Redwood's, and five of Dr. Doles', all of which had a basal rate of minus 10 or lower. In this group of fifty cases, there were 40 females and 10 males, ages ranging from 13 to 68 years. The pulse rate was of no special interest; 8 cases had a pulse rate of 90 or above, the fastest 124, and the lowest was 64.

Some writers claim that hypothyroid cases run a slow pulse, low blood pressure and subnormal temperature. I did not find it so in this series. The temperature ranged from 97 to 99.1; blood pressure—systolic, the highest 160, the lowest 90. Twenty-five had a systolic pressure of 110 or lower; these might be classified as hypotensive cases. There was not a single real obese patient in the group, though a few were slightly over-weight. The heaviest man weighed 180, the heaviest woman 179.

Symptomatology:—Twenty-eight of my thirty cases complained of a tired, weak feeling and a loss of energy; thirty-two of the entire group, or 64 per cent, gave this as their chief complaint. Twenty-six, or 52 per cent, of the entire group complained of nervousness, twenty-five, or 50 per cent, complained of headache, eighteen, or 36 per cent, of constipation, and eighteen, or 36 per cent, of digestive disturbances of some type. Thirteen, or 26 per cent, of my group, "not mentioned by the others," gave, as one of their chief complaints, chilly sensations, cold hands and feet, required cover in the summer time and two or three pairs of blankets in winter to sleep comfortably. Thirteen, or 26 per cent, complained of pain in the muscles, chiefly of the back, seven, or 14 per cent, of throat symptoms, usually choking sensation. I have not seen this symptom mentioned by any of the other writers. Five complained of losing weight, three of gaining in weight and three of raising blood. There were a few other symptoms brought out by questions, as dryness of the skin, scanty perspiration, falling of the hair, splitting of the nails, scanty and irregular menstruation, twenty-five of the forty females giving this as one of their symptoms. Many of them stated that they only flowed two days, where they formerly flowed five to seven days. Two had stopped on account of the menopause; one stopped for four months to have her sickness re-established on taking thyroid.

On examination a definite source of infection, either acute or chronic, was found in twenty-nine of my thirty cases, and forty, or 80 per cent, in the entire group. These infections included diseased teeth and gums, chronic sinus infection, pelvic inflammatory disease, prostate, and influenza of recent date.

Six of my cases were quiescent pulmonary tuberculosis; their lungs appeared to be fibrosed or practically healed, but symptoms persisted. There may be many such cases in our sanatoria, whose symptoms of improvement have not kept pace with the improvement of their lungs, that belong in this group of thyroid deficiency.

The urine was negative for the entire group,

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except four showed some pus. The blood did not show anything of any consequence. There were only eight that had a hemoglobin of 75 per cent or below; the blood counts were practically normal. The blood calciums were all normal; only seven had a calcium below 10 mgs. There were only four with a blood sugar below 80 mgs. The Kahn test was negative for the entire group. A gastric analysis was done on seventeen of the cases. Free hydrochloric acid was found absent in three cases, and low in nine, giving a hypo-chlorhydria of 70 per cent of the cases on which the test was done. This, I believe, to be an important point.

The group we have just studied had a basal rate of minus 10 or lower. We have had a number of cases that had a basal rate between minus 5 and minus 10, whose symptoms were just as pronounced or more so as those with lower readings and responded just as readily to treatment. Warfield[1] states that a patient with minus 8 metabolism, and Bridges[2] says minus 5 with symptoms, should be fed thyroid. I agree with the gentlemen, for a metabolism of minus 5 means more than a plus 15; especially with the first test, a mistake is more apt to occur on the positive side than on the negative. One should not make a diagnosis from one metabolism test alone unless all symptoms correspond, nor should you attempt to feed thyroid without frequent test. A few cases will bear special mention.

Miss M., age 23, a college girl, from near Boston, consulted me February 4, 1929, complaining of a tired, worn-out feeling, no "pep," no energy, no ambition, slight cough and constipation. She stated she had a very severe cold in November of last year, was sick in bed about ten days, and thought she had influenza. After returning to her studies, instead of gaining in strength, she grew weaker, lost interest in her work and seemed to be failing generally. Her physician advised her to go south for the remainder of the winter. She was visiting an aunt in Norfolk, who sent her to me for examination, believing she had developed tuberculosis. Examination revealed a very tall, slender, under-nourished looking girl, quite nervous, pulse 88, temperature 98.3. Blood pressure 110/80. Weight 131½; normal weight for height and age 140. Physical examination, negative. Her laboratory work was all normal, except for a minus 21 metabolic rate. She was put on enteric coated thyroid tablets, gr. ½, three times a day, advised to eat liberally of a general mixed diet, and to rest two hours after her midday meal. A month later she returned for a second test. Her metabolism had gone up to minus 8, while she had gained three pounds in weight and was feeling a great deal better. A month later, two months from the time she started treatment, she said she felt well enough to return to school.

She was permitted to do so, but was ordered to continue the thyroid under the care of her physician. I feel in this case the influenza either over-taxed or hastened an already failing thyroid.

J. A., the son of a physician, has grown in height very rapidly, being 69¼ inches tall at 13 years of age. For several years he has been subject to severe colds and attacks of bronchitis, and would miss from two to three days from school each month. Nearly everything had been done that might help to prevent these attacks, including tonsillectomy, vaccines and the use of the Alpine lamp, with only partial relief. Last spring his father noticed that the boy appeared to be tired and languid most of the time, did not care to play, and had a poor appetite. He suggested that I do a metabolism; all other laboratory work had been negative. This was found to be minus 11. His weight at this time was 109½; his normal weight for height and age, not considering his family trait, was 144. He was given enteric coated thyroid, gr. ½ a day. One month later his basal rate was the same, minus 11. He had dropped two pounds in weight. The thyroid was increased to gr. ½ twice a day. A month later his metabolic rate had gone up to plus 43. Thyroid was discontinued for one week; he was then given ¼ grain a day. He was not seen again for two months, when he had gained seven pounds in weight, and his father says he has shown marked improvement in every way. In September his rate was minus 10; he was put back on ½ grain of thyroid a day. This case illustrates two things,—that a rapidly growing child may be deficient in thyroid, and that it is necessary to do frequent metabolism tests in order to regulate your dose.

Mrs. N., age 34, developed pulmonary tuberculosis about six years ago. She has been on the cure ever since, spending a good part of the time in sanatoriums. She has had many complications,—pleurisy with effusion, absence

of free hydrochloric acid in the gastric contents, intestinal parasites and metarogia. In spite of this she has done well and her pulmonary lesion has been quiescent for about two years, but she cannot gain her strength. In January, of this year, she was complaining of being tired and weak all the time, no endurance, menstruation very scant, raising blood streaked sputum, chilly sensation. She weighed 135, her normal weight being 131; pulse 84; her blood calcium was 9 mgs.; her metabolic rate was minus 20. She was given enteric coated thyroid one grain three times a day. She was also given para-thor-mone xv minims hypodermically once a day for three days, and calcium lactate by mouth. The streaking stopped immediately, but two weeks later she came in complaining of being very nervous, with a pulse rate of 120; the thyroid was reduced to one-half grain a day. In April her basal rate was minus 21. The thyroid was increased to a half grain twice a day. She was absent from the city during the summer, returning in September, stating that she was stronger and feeling better than she had felt for years. At this time her basal rate was minus 15. She had not had any thyroid for a month. Her weight was 128½ pounds, six pounds lighter than when she started on thyroid, but only two pounds below her normal weight. I made a mistake by beginning with too large a dose. This was my first experience with enteric coated thyroid tablets.

I have followed only one case of pregnancy with a low metabolic rate. This was a rather obese lady, weighing 209 pounds, height 64 inches, at the beginning of her pregnancy. She ran a basal rate from minus 7 to minus 12 during her entire time. She was on a strict diet, took a good deal of exercise, was fed thyroid, but, in spite of all this, she put on about thirty pounds in weight. After delivery she returned to a positive reading, without thyroid. She gave birth to an eight pound baby, who has been very active and healthy up to the present time, being now a year old.

I do not mean to infer that the thyroid gland is the only one of the ductless glands that might be deficient, but it is the only one for which we can test the direct function, and it is in all probability leader of the group. In the cases of scanty menstruation or amenorrhea, the ovary must also be deficient. Koehler[14] "differentiates between hypothyroidism and hyposuprarenalism; both groups suffer from a deficiency in energy metabolism." In his series, the first group had an average basal rate of minus 26, the latter minus 17. The first group responded to thyroid therapy, while the latter did not until suprarenal cortex had been supplied. There were none in my series that I recognized as belonging to this group. However, I think there were several that suffered with headaches that were deficient in pituitary; in fact, some were not relieved of the headaches until pituitary gland was supplied. Mariner[8] claims that many of the thyroid deficiency cases are also deficient in pituitary, and that all adult hypothyroid cases will develop into hypopituitary if allowed to go untreated. I agree with Bridges[2] that infection is one of the main contributory causes of low metabolism. Sturgis [10] claims that "under-nutrition is one factor contributing to a low metabolism;" even this in the adult, in all probability, is secondary to some chronic infection.

As to whether the lowered metabolism is permanent or temporary, we do not know. Ohler and Richard[4] think that once treatment is started it will have to be continued indefinitely. In the adult, especially beyond forty, I should think this would be true, but in the child, in many instances after he reaches puberty, the gland will accommodate itself.

The symptoms of thyroid deficiency are very similar to those of myxedema, only in a milder form; in all probability, if permitted to continue untreated, many would develop into myxedema.

It is needless to say that the first attempt in relieving these cases should be to rid them, as near as possible, of all foci of infection; treat them symptomatically and build them up generally, in addition to feeding them thyroid. I do not approve a pluri-glandular treatment as the preparations are supplied by some drug firms, but I do believe in supplying one or more glandular substances where symptoms indicate.

It might not be amiss to say something about thyroid. There are many preparations on the market, with as many different strengths. The United States Pharmacopeia preparation of thyroid calls for not less than 0.17 nor more than 0.23 per cent of iodine in thyroid combination and must be free from iodine in any other combination. On the shelf of one druggist I found a complete line of thyroid preparations, not including thyroxin, put up by

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Table runs across both pages.

Name	Age	Sex	Complaint	Pulse	Temperature	Blood Pressure	Weight	Menses	Basal Rate	Hair
1. S. L.	39	M	Indigestion, tired all the time, no pep, fullness in throat, nervousness. Expectorated blood	96	98	110–80	140		—15	Falling
2. L. W. (Col.)	46	F	Chilliness, fatigue, aching of limbs, fullness of head. Indigestion	80	98.3	120–80	179	Scant	—16	
3. H. O.	34	F	Tired and weak all the time. Streaking	89	97.4	110–80	135	Small	—20	
4. C. J.	38	F	Tired, weak. Pain in back, indigestion and nervousness	86	98	120–70	166½	Small	—16	
5. J. T.	28	F	Headache, constipation, tired all the time, chilly	84	98	115–75	120	Free	—16	
6. A. M.	23	F	Tired, no pep, no ambition, constipated, chilly	88	98.3	110–80	131½	Normal	—21	
7. W. E.	27	F	Tired, losing weight, nervousness, constipation, indigestion	84	99.1	105–80	123	Small	—13	
8. G.	40	M	Gaining in weight, no pep, tired headaches, constipation, chilly	76	97	120–85	180		—14	
9. W. D.	40	F	Tired, headaches, chilly, nervousness, constipation	80	97.3	130–65	127½	Slight and irregular	—21	
10. L. H.	46	M	Tired, no pep, headaches, constipation, chilliness	80		92–60	120		—18	Falling
11. R.	30	F	Tired, weak, soreness and pain in muscles of chest. Headaches and chilly	84	99.1	110–90	102½		—10	
12. Mrs. G.	27	F	Tired, too fat, weak, nervousness, fullness in throat. Indigestion	80	98.3	95–75	117½	Slight	—21	
13. Mr. T.	33	M	Stomach trouble, tired, nervousness, dizzy spells	76	98.3	128–80	144		—13	
14. Mr. S.	40	M	Tired, weak, headaches, cough, aching, bleeding gums	72	98.2	110–85	100		—19	Falling
15. Miss K.	18	F	Tired and drowsy, no pep, no ambition	64	98.2	100–70	90	Scant and irregular	—9 —21	
16. Mrs. J.	30	F	Indigestion, constipation, headaches and chilly sensation	72	98	115–70	139	Very Slight	—20	Dry and Falling

Infections	Urine	Haemoglobin	Red Cells	White Cells	Polys.	Lymph.	Calcium	Sugar	Kahn	Gastric Analysis	Improved	Remarks
Teeth, Tonsils and Sinus	Neg.	98	5,000,000	9,450	68	30	9.66	61.5	Neg.		Yes	Improved in weight, sugar and calcium.
Pain over Gall-bladder, Pyorrhoea	Neg.	85	4,500,000	8,550	60	38			Neg.		Yes	Improved in weight and strength.
Old T. B. Quiescent	Neg.	88					9		Neg.	Free H Cl. 9% taking acid	Yes	Feeling better, stronger. Lost four pounds.
Pernicious anaemia	Neg.	75	4,350,000	7,500	63	34	10.2	79	Neg.	Free H Cl. None	Yes	In weight and strength.
Chronic sinus	Neg.	84	4,550,000	6,700	64	34	10.4	96	Neg.	Free H Cl. Normal		Lost four pounds in weight. Felt stronger. Headache no better.
Influenza two months ago, Pyorrhoea.	Neg.	80	4,750,000	6,050	60	39	10.9	83	Neg.		Yes	In weight, feeling and strength.
Incipient T. B. Chronic Pelvic disease.	Neg.	86	4,510,000	6,350	60	20	10.	9.5	Neg.	Free H Cl. 10%	No	Did not follow treatm't.
Chronic tonsillitis.	Neg.	96	5,050,000	7,450	53	44	12.2	90.9	Neg.		Yes	Felt better after tonsillectomy.
Teeth, Menopause.	Neg.	87	4,750,000	8,350	54	45	10.6	108	Neg.		Yes	Felt stronger. Did not stick to treatment. Headaches no better.
Symptoms date back to influenza, ten years ago.	Neg.	95	5,100,000	6,200	64	32	10.2	94	Neg.		Yes	Much improved.
Chronic Sinus.	Neg.	87	4,450,000	7,100	60	36	10.4	90.9	Neg.		Yes	After Sinus operation, Thyroid returned to normal, = +11.
Thyroid removed 1919. Old T. B. quiescent.	Neg.	79	4,400,000	10,500	69	30	10.2	99.9	Neg.		Yes	Much improved. Much stronger, feeling better.
Teeth, Tonsils. Chronic Prostate.	Much Pus	86	4,950,000	11,850	54	45	11.3	10.2	Neg.	Free H Cl. 8%	Yes	Infections being treated.
Chronic Tonsillitis. Teeth and gums.	Neg.	75	4,700,000	8,550	60	39	9.7	9.9	Neg.	Free H Cl. 6%	Yes	Much better in every way.
None—Young school girl.	Neg.	75	4,450,000	7,850	67	31					Yes	Much better in every way.
Teeth. Symptoms of Gall-bladder disease.	Neg.	80	4,200,000	9,000	62	37	10.7	99.9	Neg.	H Cl. 14%	Yes	Feels better and digestion is better.

Table runs across both pages.

Name	Age	Sex	Complaint	Pulse	Temperature	Blood Pressure	Weight	Menses	Basal Rate	Hair
17. Mrs. K.	37	F	Cough, nervousness, loss in weight, tired, no pep, pain in back	72	97.3	100–80	110		−19	
18. Mrs. J.	25	F	Tired, irritable and nervous	76	98	98–80	106		−15	
19. Mrs. K.	48	F	Tired and weak, headaches, indigestion and nervousness	72	98	120–80	105	Irregular	−12	
20. J. A.	13	M	Tired all the time. No pep, frequent colds. No desire to play				109		−11	
21. Miss J.	30	F	Tired most of the time, no pep, indigestion, chilly. Eruptions on skin	96	98.3	112–88	111		−10	
22. Miss G.	28	F	Tired, no pep, nervous, chilly. Putting on weight	84	98.3	110–70	140	Two days and Slight	−21	
23. Mrs. C.	43	F	Tired and weak all the time, chilly. Pain in back	84	98		116	Irregular and Scant	−26	
24. Miss P.	19	F	Fullness of throat, stomach trouble, shortness of breath	80	98.2	110–75	116	Irregular	−21	
25. Miss C.	30	F	Tired easily, daily rise of temperature of 99. Pain in left leg	64	98.3	110–70	131		−21	
26. Miss C.	31	F	Acne, irregular menstruation, frequent attacks of tonsillitis	76	99.3	110–80	103	Scant	−15	
27. Mrs. M.	35	F	Stomach trouble, tired, very nervous, choking sensation, diarrhoea	112	99	110–80	105		−13	
28. Miss B.	17	F	Tired, no pep. Pain in back	76	98.2	100–80	134		−12	
29. Mrs. L.	41	F	Tired all the time, headaches, constipation and very nervous	64	98.3	90–80	120	Very Scant	−24	Dry and Falling
30. Mrs. H.	52	F	Tired all the time, headaches and chilly. Constipated							
								PATIENTS OF		
1. Mrs. J.	21	F	Loss of weight	100		108–74	110	Absent 3 Mos.	−21	
2. Mrs. A.	68	F	Loss of weight, chilly, indigestion and cough	84		100–74	110	St'p'd	−21	
3. Mrs. H.	54	F	Cold hands and feet, nervous, discharge from nose	78		140–80	141	St'p'd	−20	
4. Mrs. M.	39	F	Dizziness, nervousness. Pain over G. B. Headaches and indigestion.	70		160–97	149	Scant	−28	

Infections	Urine	Haemoglobin	Red Cells	White Cells	Polys.	Lymph.	Calcium	Sugar	Kahn	Gastric Analysis	Improved	Remarks
Sinuses and ulcerated Cervix.	Neg.	85	4,800,000	6,800	63	23	10.2	79.9	Neg.	H Cl. 25%	Sl'gt	Did not stick to treatment.
Influenza two months ago. Symptoms worse since.	Neg.	89	4,750,000	8,850	68	30	10.7	85	Neg.	H Cl. 35%	Yes	Feeling much better.
Tonsils and teeth removed three years ago.	Neg.	80	4,600,000	5,250	52	45	10.6	95	Neg.	H Cl. 19%	Sl'gt	Patient has chronic Myocarditis.
Sinus infection.			Not wor	ked up	to	t	his tim	e.			Yes	Much better. Gained 7 pounds in 3 months.
Chronic running ear.	Neg.	85	4,750,000	8,600	54	46	10.04	110	Neg.	H Cl. None	Sl'gt	Patient 50 miles away. Have not been able to follow closely.
T. B., with pleurisy, two years ago. Quiescent.	Neg.		Blood wo	rk not	do	ne	at thi	s time.			Sl'gt	Feeling stronger. Lost 3½ lbs. in 3 months.
Old T. B. quiescent. Influenza two months ago.	A few Pus Cells	75	4,500,000	6,050			10.09	80.2	Neg.		Sl'gt	Did not stick to treatment.
Tonsils removed four years ago for present symptoms, which were not relieved.	Neg.	76	4,500,000	7,200	54	42	10.8	89	Neg.	H Cl. 6%		Have not heard from since started treatm'nt.
Chronic Pelvic disease.	Neg.	88	4,450,000	11,450	56	41	10.6	102			Yes	Feeling much better and stronger.
Chronic tonsillitis.	Neg.	82	4,550,000	6,800	64	35	10.9	92	Neg.			Has not been heard of since tonsillectomy.
Pelvic inflammatory disease	Few Pus Cells	79	4,450,000	8,650	64	33	10.9	97	Neg.	H Cl. None	Yes	Operation—Pelvic and appendectomy.
Tonsillitis. Ulcer on Cervix	Neg.	77	4,450,000	6,850	55	42	11.2	90.9	Neg.		Yes	Feeling much stronger.
Old T. B. Quiescent.		89	4,850,000	6,250	63	38	10.8	92	Neg.		Yes	Feeling a great deal better and stronger.
Chronic Appendicitis and Influenza.			Blood wo	rk not	w	or	ked up	.			Yes	Much better.
Dr. H. M. Doles Not any.	Neg.	90	4,700,000	7,200	68	28	10.3	89.9		H Cl. 19%	Yes	Gained 15 pounds in six weeks. Menstruation regular.
Not any.	Neg.	83	4,450,000	9,850	62	27	10.8	102	Neg.	H Cl. 5%	Yes	Marked improvement.
Sinus and nasal infection.	Neg.	82	4,200,000	5,450	50	47	9.9	94.3	Neg.	H Cl. 9%	Yes	Slightly improved.
Teeth and Cervix. G. B. questionable.	Some Pus	87	5,000,000	7,400	75	22	11	144	Neg.	H Cl. 37%	Yes	Rather slight.

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Table runs across both pages.

Name	Age	Sex	Complaint	Pulse	Temperature	Blood Pressure	Weight	Menses	Basal Rate	Hair
5. Mrs. O.	27	F	Headaches, dizziness, nervousness, loss of weight and constipation...	106		110–80	112	Profuse	−20	
1. Mr. B.	33	M	Indigestion, headache and nervousness	99		115–80	153	PATIENTS OF	−18	
2. Mrs. H.	31	F	Headache, nausea and vomiting...						−11	
3. Mrs. E.	49	F	Pain in back and nervousness	75		125–35	116		−22	
4. Mrs. B.	34	F	Dizziness, headache and constipation	86		118–60		Free	−12	
5. Miss G.	36	F	Nervousness, constipation, burning sensation in head	64		104–70	143		−21 −11	
6. Miss M.	15	F	Nervousness, headaches and constipation	100		110–80	99	Regular	−15	
7. Mrs. M.	35	F	Headache, nervousness and dry skin	62		128–80	167	Regular	−12	
8. Mr. M.	15	M	Nervousness, headaches and constipation	80		115–80	120		−14	
9. Miss C.	27	F	Nervousness, skin dry. Unable to sleep	80		130–80	116	Irregular and Scant	−15	
10. Mrs. E.	33	F	Headache and constipation	59		100–60	112	Regular	−18	
11. Mr. T.	25	M	Indigestion, dry skin, nervousness, constipation	36		110–75	128		−11	
12. Mr. P.	51	M	Pain in shoulder and knee	124		130–75	158		−11	
13. Miss K.	36	F	Headaches, choking, tired and nervous	78		125–80	120		−10	
14. Mrs. W.	27	F	Nervousness, shortness of breath, headache and choking sensation..	70		120–90	118	Painful	−20 −16	
15. Miss J.	30	F	Numbness, nervousness, shortness of breath. Does not perspire	74		130–80	137	Painful	−14	Skin Dry

eleven different firms. Their strengths ran as follows:—Armour, desiccated gland containing 0.2 of iodine in combination; Mulford, desiccated gland, no strength given; Swan-Myers, desiccated gland U. S. P.; Lilly, desiccated gland, U. S. P.; Parke Davis & Co., desiccated gland, not less than 0.3 per cent iodine in combination. Burroughs-Wellcome & Co., 1 gr. equals 5 gr. of fresh gland. Most writers advise giving thyroid without mentioning strength or make; one writer mentioned giving thyroid extract 5 to 15 grains daily. It would have been just as accurate for him to have prescribed 10 grains of purgative daily.—the druggist would

Infections	Urine	Haemoglobin	Red Cells	White Cells	Polys.	Lymph.	Calcium	Sugar	Kahn.	Gastric Analysis	Improved	Remarks
Teeth. Appendix removed.	Neg.	81	4,320,000	6,600	53	45	11.5	99	Neg.	H Cl. 35%		No improvement.
Dr. Frank H. Redwood												
Sinuses.	Neg.	108	6,110,000	6,450			9.6	135	Neg.	H Cl. 41%		Not heard from.
Sinuses.	Neg.	80	5,550,000	10,550	68	31	10.8	97	Neg.		No	Pituitarism. Did not follow treatment.
Pott's Disease.	Neg.						Not done.					Pott's Disease. Not heard from.
	Neg.	65	3,750,000	8,350	69	26	10	108	Neg.			Secondary anaemia. Not heard from.
Pelvic Inflammatory Disease.	Neg.	72	4,120,000	10,500	70	28	9.8	95	Neg.		Yes	Did well.
Teeth and tonsils.	Neg.	84	4,750,000	9,200	65	33	9.1	86	Neg.		Yes	Feels much better. Gained 20 pounds on on Thyroid.
	Neg.	70	4,500,000	6,500	48	50	10.6	99	Neg.			Improved on Pituitary.
Tonsils and growing very tall.	Neg.	81	4,450,000	8,600	60	37	10.3	102	Neg.		Yes	Did not stick to treatment.
	Neg.	76	4,150,000	7,500	63	26	10.8	90	Neg.			Put on Thyroid. Not heard from.
Six weeks pregnant.	Neg.	74	3,840,000	5,100	65	30	10	83	Neg.			Put on Thyroid.
Abscessed teeth.	Neg.	98	5,250,000	10,800	60	35	10.1	109	Neg.		Yes	Infection removed. Given Thyroid. Much better.
Tonsils and teeth.	Neg.	82	4,540,000	5,400	42	55	10.8	72	Neg.		Yes	Infection removed. No Thyroid. Better.
Secondary anaemia.		73	4,000,000	5,450	55	38	82		Neg.		Yes	Slightly better.
	Neg.	83	3,950,000	5,350	60	36	10	90	Neg.		Yes	Given Thyroid. Some better.
	Neg.	72	4,500,000	6,650	62	34	10.4		Neg.		Yes	Given Thyroid. Very much improved.

have known just as well what he wanted. In the first place, there is no such preparation as thyroid extract, yet 25 per cent of thyroid prescriptions call for the extract, according to a well-informed druggist. There is a desiccated gland and the whole gland; the desiccated gland is five times as strong as the whole gland, but all of these are not the same strength. In all cases, I think the gland should be fresh. I think one should become accustomed to a preparation and use this exclusively, just as you do in digitalis.

For a long time I used only Armour's preparation. Last January Parke Davis & Co. put

on the market an enteric coated tablet, and since then I have been using this entirely, with, I think, satisfactory results. Whether the enteric coated tablets are any more potent than the others, I do not know, but I believe they will keep better and do not have that disagreeable odor that the gland tablets usually have.

SUMMARY.

Fifty cases with a basal rate of minus 10 or lower have been studied, the symptoms of which were very similar to those of myxedema, but much milder. Forty, or 80 per cent, had some acute or chronic infection. Seventy per cent of those examined showed some hypochlorhydria. Thirty-five, or 70 per cent of those that took treatment, improved on thyroid therapy. I believe that a patient with a basal rate of minus 5 or lower, with symptoms, should be treated. Select the brand of thyroid that serves you best and stick to it, designating the brand when prescribing. Remember in making an examination, the endocrine glands form a very small portion of the body by weight, but they control or regulate many important functions of the body and should be given due consideration.

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Medical Arts Building.

DISCUSSION.

DR. JAMES H. SMITH, Richmond: I think Dr. Harrell has presented in a very sane way an interesting and important subject—interesting and important not because it involves the issues of life and death; indeed, rarely does it incapacitate the patient; but important because it does often have a decided bearing on the patient's sense of well being and very probably on his resistance to infection. The indications for thyroid medication, a clear-cut, classical myxedema, are too well known to demand discussion. I think we are also pretty well agreed that there is a submyxedema in which the physical signs are more or less incomplete, but in which one or more of them are found, and in this group I think the indications for thyroid are too well known to demand discussion. But I think Dr. Harrell has in mind another group in which the *symptoms*, as he says, resemble myxedema, and I think it is well to fix attention on this group in the few minutes allotted for discussion. I think there is a group in which thyroid treatment should be given and in which the results are often very happy. I do not know whether we are justified in labeling this group thyroid deficiency or myxedema or any other name in which the thyroid element comes in. If, on the other hand, we recognize that thyroid treatment is beneficial, perhaps only as a tonic, then I think we are on the safe side. To be perfectly frank, we have not mastered the subject, by any means. We see cases in which we expect to get nice results but do not get them; again, the clinical improvement is not always paralleled by an increasing metabolic rate. We can not always explain that.

Dr. Harrell has called attention to the need for better thyroid standardization than we have had up to this time. The men who know most about the subject are inclined to teach now that there is an individual response to thyroid, even so definite a thyroid preparation as thyroxin. So I believe Dr. Harrell is quite correct in expecting therapeutic results in many cases which show a low metabolic rate without reaching any frank clinical level of myxedema.

Dr. Harrell expresses some doubt as to the correctness of his reading of plus 43 after rather conservative thyroid medication. I should like to think with him that that is an error, because it would give us an uncomfortable feeling that we had put into the hands of patients a preparation so potent as to bring up a subnormal rate of metabolism within a brief length of time from below normal to plus 43. I have not seen such a result, and I hope I shall not, because it would be disconcerting, and I hope Dr. Harrell will be able to prove in the course of time that that was an incorrect reading, rather than plus 43.

DR. C. J. ANDREWS, Norfolk: I think this is an extremely important subject that Dr. Harrell has brought out. Perhaps the most important part of it is that it calls our attention to it. It is a thing which is not written on the patient when you see

him, and if we keep it in mind we shall not be as likely to overlook it.

Not many years ago we were told that the reason for the lassitude of the South was hookworm. Now we are rather inclined to think that in some localities hypothyroidism is at least one of the causes of that condition. It seems to be a local condition to some extent, as we know there are certain areas in which it is not present to so great an extent.

I want to speak particularly of the parturient woman. Occasionally we find a woman who says she feels better during pregnancy than at any other time, and who has abundant energy. That is not the case in which we have to be bothered about the thyroid. Then there are others who do not feel as well; then others stop during pregnancy, sit still, do not do anything, get fat in spite of our appeals to take exercise, who become enormously fat and have a large baby and have a very difficult delivery. It does make an enormous obstetrical problem at times.

Dr. Harrell also called attention to the fact that this hypothyroid problem is four times as frequent in women as in men. Some of them are overweight. We used to believe that was always true, but now we know it is not. Some of these tired, weak women who have been to every clinic and every cult are hypothyroid. Then there is the question of sterility. I have had as many women come to me for that cause as because they are pregnant. Some of these are hypothyroid cases.

In regard to diet, I think the restriction of diet in pregnancy, low protein diet and low caloric diet, will produce a low metabolic rate.

Dr. L. Minor Blackford, Atlanta, Ga.: These "low basal metabolic rates" are much more common in women than in men, as Dr. Harrell brought out, and achlorhydria is the rule. Another characteristic is that, after administering the dye, you rarely see a shadow of the gall-bladder. In contrast to true myxedema, these patients exhibit vasomotor instability, sweat on the least provocation, and tire easily. They are often nervous and, perhaps on account of the styles, thin. Many of these women go to the Mayo Clinic for thyroidectomy, which they do not get. However, there seems to be a tendency to subsequent development of exophthalmic goiter; I have seen such a girl become very ill with exophthalmic goiter but have a B. M. R. of only plus 20.

These patients are excessively fond of music; they will spend hours playing and go to almost any lengths to get to a concert. I think the college belle is usually of this type; she carries on many activities, is extremely vivacious, eats little, takes in a dance with a late date afterward for weeks at a time, and does a lot more than we could possibly do,—and is likely to wind up with a "nervous breakdown." I believe if you will watch such patients carefully, give them a generous diet with plenty of outdoor exercise and massive doses of psychotherapy, you can carry most of them along without thyroid medication.

Dr. W. H. Higgins, Richmond: In spite of the exhaustive studies on thyroid diseases in the past few years, it has been surprising to me that our textbooks have not emphasized this subject, which Dr. Harrell has brought out in his interesting paper. For a number of years we have been thoroughly familiar with myxedema, yet, undoubtedly, there is a clinical entity, which is called by a number of terms, such as larval myxedema, hypothyroidism, thyroid deficiency, etc. Undoubtedly that condition exists.

I was very glad that Dr. Harrell emphasized three points which are not brought out in the text-books on the subject of true hypothyroidism—underweight, rapid pulse, and nervousness. Certainly those who have studied this type of cases have found that symptoms of that kind, which ordinarily we think are compatible with an over-active gland, undoubtedly at times occur in the under-active gland.

I spoke of true hypothyroidism. Dr. Harrell emphasized, I think, a very important point. Are these cases true hypothyroidism because they have a minus rate? Certainly there is a division right there on what cases we classify as arising from thyroid deficiency and what cases come from other conditions. Certainly, if you go into some of the sanatoriums for nervous disease and the institutions for the insane, you will find a vast number of cases of insanity and other types of functional neuroses which run a low rate but are not helped by thyroid therapy in the slightest. So I think we should be extremely careful about adopting a low reading alone as pathognomonic of hypothyroidism. But if your patient, in addition to his low rate, has some evidence of changes in the skin, dryness of the skin, sensitiveness to cold, falling of the hair, etc., I think we are justified in trying out thyroid therapy on him.

In a series of cases which I published on a previous occasion, diseases of the gall-bladder stood out far more prominently as associated factors in underactive thyroids than any other one disease. Likewise, in those cases upon which stomach analyses have been made in my office, hypoacidity was found in a very large majority of cases.

Dr. Harrell, closing the discussion: I wish first to express my thanks to the gentlemen for their kind remarks. There is one thing I want to mention. It is very hard to get an accurate reading in any child aged thirteen; we have to surmise somewhat. I had another child of thirteen who had a reading of minus 19 who was given a half grain of thyroid a day, and three weeks later had a reading of plus 7. Grain ¼ proved to be his dose.

In reply to Dr. Higgins' observation, a large number of my patients had gall-bladder symptoms also. I forgot to mention that. I thank you.

CONSERVATIVE TREATMENT OF PULMONARY ABSCESS.*

By EVERETT E. WATSON, M. D.,
and
CHURCHILL ROBERTSON, M. D.,
Salem, Va.

The process of healing of a suppurative lesion, regardless of the location in the body, is fundamentally the same. The principles of treatment are likewise essentially the same, except when certain anatomical peculiarities make it necessary to consider special procedures. Pulmonary suppuration, though long a matter of much clinical interest, still presents a difficult therapeutic problem. No matter what method or methods are employed the present efforts toward its solution leave much to be desired. It is so protean in its manifestations and has such a variety of complications, that there can be no set rule in regard to treatment and only a careful study of each case will enable one to outline a course of pro-

*Read at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

XUM

cedure. In general, treatment consists in removal of the cause if possible (foreign bodies), establishment of drainage, obliteration of cavities, general supportive measures, and, when necessary, removal of diseased tissue.

While some men advocate surgical drainage after a few short weeks, we have, for the past seven years at Mount Regis, endeavored to treat these cases conservatively. By conservative treatment we mean the employment of any aid other than radical surgery, such as rest in bed, proper diet, postural drainage, Alpine lamp, vaccines (both autogenous and stock), drugs, bronchoscopic drainage, and pneumothorax. When these remedies failed, we had recourse to surgery.

The series of cases presented here (28) embrace those which have been under treatment in the Sanatorium, as well as seven cases which were under our supervision but treated at home. Four of the number were chronic upon admission, i. e., of more than one year duration and having received prolonged treatment elsewhere. A large number of cases seen in consultation are not included because of the difficulty experienced in securing full histories and progress notes. Two cases showed tuberculosis in addition to the abscess, while one was complicated by angiosarcoma of the lung.

The longest time spent by any patient in the Sanatorium was fourteen months. The shortest time was one day. Three cases spent less than a week. One of these was discharged against advice as unimproved, but later recovered under home treatment, and two died. The average time spent in the Sanatorium was 116 days.

As improvement took place there was a universal gain in weight, the average being seventeen pounds for each patient. One patient gained nineteen and three-fourths pounds in one week. The maximum temperature on admission ranged from 99.2° to 104°, while the white blood count averaged 15,300 per cubic millimeter.

The right lung was involved in eighteen cases, the lower lobe being affected in eleven, the upper lobe in five, and the middle in two cases. Eight had a left lung involvement, the location being equally divided between the upper and lower lobes. Seventy-five per cent gave a history of one or more hemorrhages or recurring streaking for short periods of time.

Etiology

The etiological factors might prove interesting at this point: 30 per cent followed tonsillectomy; 17 per cent followed acute respiratory conditions; 8 per cent after extraction of teeth; 4 per cent each after lancing alveolar abscess and inspiration of foreign body. No cause could be found in 36 per cent of cases.

Drainage

We consider postural drainage one of the most important aids in treatment. The literature on drainage by bronchoscope is rather barren. Myerson reported a series of six cases treated by this method and came to the conclusion that cases of long standing do not respond readily, but that this method is very desirable because of absence of marked discomfort, lack of danger when compared to radical surgery, and because institutional care is not required. He especially cautions the operator to recognize its limitations in time to refer impossible cases for proper surgical attention. Kernan was disappointed in the results obtained by this method of treatment. He believes that three treatments are necessary before any results are noted. The best results are obtained when the abscess appears as a result of tonsillectomy. Moore, of Jackson's Clinic, reports 25 per cent cures. Moersch reports nineteen cases in which he secured excellent results in sixteen. One of our cases was treated bronchoscopically after conservative treatment had failed. The etiological factor was a tonsillectomy under general anesthesia. The abscess was clearing up satisfactorily when the patient developed pneumococcus meningitis and died. This type of treatment is not applicable in cases of multiple abscess.

The method employed in postural drainage depends upon the location of the lesion. Frequent change of position is indicated in all cases. The routine in basal cases, as employed here, is to keep the foot of the bed elevated about twelve inches at all times. Ordinarily, if the patient's condition is such as not to contraindicate it, the best results are obtained by having someone support the patient so that the upper portion of the body is hanging over the edge of the bed in a vertical position, with head down. A pus basin is placed on the floor. This position is maintained for from ten to fifteen minutes and repeated three times

daily, always with assistance and under supervision. If improvement is manifested by lowering of temperature, decrease in the amount or offensiveness of the sputum, decrease in w. b. c., improvement in appetite and general condition, lessened cough, more favorable physical and X-ray findings, the probabilities of healing are good and this form of treatment should be persisted in. Even if there is no definite downward course and the condition apparently remains the same, this treatment should be continued for a reasonable length of time. Hedblom says that, in all cases which do not become steadily worse during a period of from one to two months, expectant treatment is indicated. Greer was discouraged at his results following postural drainage. We found this procedure all that was necessary in twelve cases. Of course, it was supported by Alpine lamp, rest, and other routine measures. These were acute cases resulting from tonsillectomy, following pneumonia, sinus infection, or oral sepsis.

Pneumothorax

Artificial pneumothorax, although exceedingly useful in some cases has a number of limitations and can be used only in a selected type of case. If used unwisely and in the face of certain contraindications it can do a great deal of harm. The chief application comes in the deep-seated, preferably hilum, abscess. Certainly, it should be used only after the greatest consideration and after postural drainage has been tried. To be successful there should be no adhesions over the site of the diseased process, as is often the case, and, which prevent proper collapse or closure of the cavity. It should not be attempted in abscesses located near the periphery because of the ever present danger of spontaneous rupture into the pleural sac with resultant empyema. Rich and Tewksbury report 80 per cent recovery with artificial pneumothorax. Jacobeus reports three cases all of which were treated successfully with artificial pneumothorax. Metteldorf in the Munich Clinic advises against it because of danger of mixed infection and rupture into the pleural cavity. He prefers pneumotomy, which is usually preceded by filling the cavity with paraffin. Greer made a favorable report in 50 per cent of his cases treated this way, but his good results were counterbalanced by a mortality of 50 per cent. Anderson prefers penumothorax after palliative treatment has been tried for at least a month.

Artificial pneumothorax was attempted in eleven of our series. Three were successful in that the collapse was complete, and permanent cure resulted from the treatment. Four were partially collapsed but later discontinued. These patients recovered, but in our opinion the collapse played little if any part in the results obtained. Adhesions prevented collapse in three and these died later following surgical drainage. A needle-track infection followed the fourth attempted pneumothorax, and surgical interference was necessary. This patient recovered following a phrenic avulsion.

Vaccines

We believe that in some cases with bacterial infection as the etiological factor an autogenous vaccine is helpful after the acute symptoms have subsided. The cultures are best obtained with the bronchoscope, but practically uncontaminated cultures can be secured by thoroughly cleansing the mouth and throat immediately before postural drainage. We believe this materially helped two of our cases. Dean B. Cole reports encouraging results from the use of Parke Davis and Company's Biological 340 Catarrhalis Immunogen.

Drugs

McRae advises the use of creosote, in chronic cases, in full doses by mouth or inhalation. Kern uses drugs as the indications occur—tonics for a flagging appetite, or iron and arsenic for the secondary anemia. We have always endeavored as far as possible to avoid the use of drugs. A mild cough mixture is sometimes given to insure sleep, but there is always the danger of giving enough to suppress the cough reflex and thus interfere with drainage.

Alpine Lamp

We are not sure as to the therapeutic action of the Alpine Sun Lamp, but experience has shown that it is beneficial. We use it routinely in all of our cases and think it is of great benefit.

Along with the lamp we give sun baths, and, when the natural sun is unavailable, air baths.

Rest and Diet

Rest in bed is undoubtedly one of the most beneficial therapeutic procedures. Over how long a period this should be continued is a

moot question, but in general this treatment should be persisted in for months after all active symptoms have subsided. It is certainly true that many so-called relapses occur because rest in bed was not enforced for a sufficient length of time. It was formerly thought that rest in a wheel chair was just as good, but we have not found it necessary to recourse to this, as we have been able to get our patients to the sun porch on the bed. Coughing occasionally precipitates vomiting, but not often. We do not make a practice of artificially stimulating the appetite because we have found that when the temperature returns to normal and the general condition improves, an increased appetite and gain in weight always follows.

Other Measures

Although this paper is concerned chiefly with the *conservative* treatment of abscess, it will be incomplete unless mention is made of several other therapeutic aids.

Twenty years ago the usual procedure was to needle an abscess for diagnostic purposes. We discontinued this following a sudden death from hemorrhage after such an attempt. The possibility of disseminating infection is also ever present.

One of our cases was an abscess of fourteen months' duration who was moribund on admission and remained at the Sanatorium only one day. He was transferred to a general hospital where surgical drainage was followed by death. One case had an apical abscess with adhesions, which had not responded to any conservative measures. He made a complete recovery following a thoracoplastic collapse.

Mann has reported two cases in which good results followed the intravenous use of mercurochrome. We do not believe that this has been tried enough to warrant serious consideration.

Lobectomy is advocated by some men when the abscess is multilocular from the outset or in those cases in which secondary abscesses develop after the first has cleared up, or in any case in which drainage or collapse is ineffective. This is an extremely hazardous procedure and the mortality is high. This should be attempted only as a last resort.

The procedure of needling the abscess and filling the cavity with bismuth paste carries so little chance of success and is so fraught with danger that we have never considered it.

To sum up the treatment: Twelve cases were given routine measures with postural drainage; pneumothorax was attempted in eleven cases; in five surgical drainage or resection was necessary (three of these followed unsuccessful penumothorax); bronchoscopic drainage was used in one. Of these cases, seven were considered cured upon discharge from the Sanatorium; eleven improved while in the Sanatorium, and later completely recovered; five were unimproved upon discharge from the Sanatorium, one of whom later recovered, the remaining four terminating fatally; five died, either in the Sanatorium or the hospital to which they were referred for surgical treatment.

The cases herein reported are not sufficient in number to warrant arbitrary conclusions as to the most desirable methods of treatment. The fact that these case reports are taken from records covering a period of fifteen years is worthy of emphasis. Beginning fifteen years ago the first several basal cases were considered surgical and referred for operation as soon as the diagnosis of non-tuberculous pulmonary abscess was confirmed. The mortality rate was extremely high, only one being permanently cured. Of the upper lobe and hilum cases treated conservatively, all recovered. These were not referred to the surgeon, chiefly because the location of the abscess made surgical drainage notably hazardous. Taking our series as a whole the percentage of cures is not remarkable, but the point which we wish to stress is that, since we have been considering pulmonary abscess a medical disease with recourse to surgery a last resort, our mortality rate has been greatly reduced.

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Mount Regis Sanatorium.

DISCUSSION.

DR. DEAN B. COLE, Richmond: I have had the good fortune to see a number of abscesses treated by Dr. Watson and Dr. Robertson and wish to congratulate them upon their success. Like many of us, they get and see the most difficult cases; the easy ones do not reach them.

There is a triad consisting of early diagnosis, absolute bed rest, and postural drainage that applies to all acute lung abscesses. If that were followed by all doctors who come in contact with these cases we should have but few of the difficult chronic cases to treat, and there is certainly no risk in making an early diagnosis. The X-ray is an important factor in this. When you make your diagnosis, or before you make it, put that patient at absolute bed rest and keep him there, and put him on postural drainage four or five times a day, with the head over the side of the bed down toward the floor. Those are the essential measures.

As to vaccines, I think they do no harm and frequently do good. In our practice the sputum is collected from all cases and is invariably cultured. Sometimes we find unusual and interesting organisms. The use of the lamp is also beneficial in some cases and apparently does no harm in any. Bronchoscopy, where indicated, is most beneficial. Pneumothorax, as Dr. Robertson has brought out, is something not to be tampered with. I have seen a great deal of harm done by the injudicious use of pneumothorax in these cases. A small dose given at frequent intervals, with no effort to collapse the abscess cavity, is of value. Surgery should be kept for the advanced and chronic cases. Any procedure that is used only in the hopeless cases naturally is going to carry a high mortality.

DR. ROBERTSON, in closing the discussion, showed some lantern slides illustrating the paper.

MODERN TREATMENT OF PULMONARY TUBERCULOSIS.*

By FLETCHER J. WRIGHT, M. D., Petersburg, Va.

PROPHYLAXIS.

It is said that for every known case of tuberculosis in Virginia there are ten unknown cases. Bearing this fact in mind, it behooves us to teach the laity the importance of, and the methods of, prevention.

They should be taught that no child should stay in the room of a known case of tuberculosis, or be fondled or kissed by such a person. An infant from birth should be guarded against exposure to this disease. If the baby is bottle fed, it should be given boiled or pasteurized milk, or milk from a tuberculin tested herd, if raw milk is used.

The next generation should be more healthwise than the present, since the children are being taught, in the schools, the importance of observing such health rules as urge them to keep everything out of their mouths except food and drink, the danger of the common drinking cup, etc.

It is assumed that a careful and painstaking examination is made before the active treatment of pulmonary tuberculosis is begun. The importance of locating and removing all foci of infection should be remembered, for often infected tonsils and abscessed teeth, or antrum disease will prevent recovery, or at least so overburden the patient, that his recovery is greatly delayed. The fact that tubercular patients may have concurrent diseases is sometimes overlooked.

PSYCHIC TREATMENT.

It takes tact and a good knowledge of human nature to know what or how much to tell a patient, when a diagnosis of tuberculosis has been made. In the vast majority of cases, a frank, honest statement is the best policy, always emphasizing, of course, the bright side. If the patient is the head of the family, he is entitled to know the facts, in order to arrange his business affairs. In advising sanatorium treatment, do not tell him he will be home in a few months, but insist that he leave this

*Read at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

to the judgment of the physicians in charge of the sanatorium. Much harm has been done, and the profession often criticized when the doctor tells the patient "You'll be all right in a few months!" A physician needs not only to treat the disease, but to remember that each patient must be considered individually, studying him from every angle.

Rest.

In the successful treatment of tuberculosis, rest is by far the greatest factor. By rest is meant bed rest, complete or modified, according to the patient's condition. In my opinion, any one who has an active pulmonary lesion sufficient to be detected by physical examination should be put to bed for at least six months. This means twenty-four hours in bed, with or without bathroom privileges, according to condition of patient. Here, too, the individual's temperament may sometimes prevent us from doing what is really best for him. If he cannot be made to see the importance of bed rest, and is rebellious, it may be best to allow a little more liberty, provided his maximum daily temperature is not above 99.6° F. Bed rest, with as nearly complete physical and mental relaxation as possible, which is of such vast importance, cannot possibly be secured until the physician has won the confidence of the patient by showing real interest and sympathy.

To lie flat in bed, with one or two small pillows under the head, diminishes respiration (since less oxygen is needed when at rest), lessens the cough, slows the heart action, and improves the digestion. Since less food is required to support the body, the patient puts on weight. After a variable length of time, according to the progress made, rest can be modified to suit the individual needs.

While it is possible to carry out the treatment at home, it is *much* better to insist upon sanatorium care, where the patient is educated as to methods of disposal of the sputum (which means that he should never expectorate in anything but a sputum cup which is prepared for the purpose), suppressing cough, use of gauze over mouth and nose when coughing or sneezing, etc. If the treatment cannot be continued longer than six months at a sanatorium, the education received while there may save many lives.

Fresh Air.

That fresh air in the open, preferably on a suitable porch, is of much importance in the treatment of tuberculosis, is generally conceded. The porch should be arranged so that it has a southern exposure, being protected by windows (which are left open in mild weather) on the east and west sides. The porch should not be less than 16 feet wide, high pitched and well screened with fine mesh wire.

A high altitude is no longer considered necessary, for the results obtained in well conducted sanatoria in low altitudes compare most favorably with those in a higher altitude. Certain types of tuberculosis may probably do better in a high, dry climate, but these are exceptionally few.

In very cold weather it is sometimes hard to keep warm on a porch, but with good thick mattresses, heavy paper between the springs and mattress, or preferably a double blanket between the mattress and bottom sheet, and with heavy, all wool blankets which are full length and wide, one may keep warm in any ordinary weather. In extreme weather, at a sanatorium, it is permissible to be "pulled in," leaving the double doors to porch open. A stocking cap and woolen socks are needed in very cold weather. A dressing room for every two patients is provided in all sanatoria, so that the bed patients can be pulled in for meals, baths and to receive visitors, and ambulant patients may use it as a dressing room.

Diet.

The diet should be well balanced, containing a sufficient number of calories and vitamins. It is no longer thought wise to "stuff" patients. Advise drinking six glasses of milk a day, or certainly four, and eating anything else desired, provided there are no contraindications.

Eight glasses of water should be taken daily, one or two before breakfast after the mouth toilet has been made. Raw eggs are not usually used at a sanatorium, since soft cooked eggs are much more digestible. Milk, however, is much richer in food products. The vegetables and fruits furnish the necessary vitamins and minerals, and help to relieve constipation.

Exercise.

There is a time for exercise for patients who have no temperature and have shown satisfactory gain in weight. Those who have been bed patients are first allowed dressingroom privilege once a day, then twice, and later as often as necessary, provided they are doing

well. Later, a sanatorium patient is allowed to go first to one meal a day, and the other two are added according to his condition. This is kept up for a variable length of time, when finally he should be allowed a short walk of fifteen minutes in the morning, for two weeks. After this, if there is a gain of weight and no increase in his symptoms, he is allowed exercise for fifteen minutes also in the afternoon. This gradual increase is kept up as long as no untoward results are seen, and the improvement is satisfactory. Even when the exercise has been increased to three or four hours a day, the patient is required to be *in bed* the rest of the time, except when at meals.

At most sanatoria there can be found some light work to be done, which will help to pass the time and make the patient better satisfied. Never try to "rush" exercise.

Artificial Pneumothorax.

In unilateral pulmonary tuberculosis, or bilateral tuberculosis, with minimal lesion on one side, artificial pneumothorax is a life-saver. However, following the suggestion of Dr. Gerald Webb, of Colorado Springs, later emphasized and enlarged upon by Drs. Gekler and Weigel, of Albuquerque, I am in favor of trying out the postural treatment of putting the patient on the affected, or side most involved, to be kept in that position as much as possible. Drs. Gekler and Weigel go a step further and have a hair mattress made, three inches thick, ten inches wide and twenty inches long, which is placed under the arm of the patient so he is encouraged to lie on that side. The length of the mattress is sufficient to enable him to change position slightly.

As there is a possibility of obtaining a satisfactory result without pneumothorax in a considerable number of cases, there could surely be no harm done by first giving postural treatment a trial. There are cases with such dense pleuritic adhesions that artificial pneumothorax cannot be given, and in such cases postural treatment should be tried. Dr. Webb states that when a patient is first put on the side, respiration is increased for a short time only, after which there is a marked decrease in the respiration rate, thus allowing the lung greater rest and consequently a greater opportunity for the lung to heal by both absorption and fibrosis, frequently closing cavities. I have personally used this method with some apparent success.

Artificial pneumothorax should certainly not be attempted by one who is not familiar with the indications therefor, the technic, and the instrument used. Great care should be used in the amount of air injected and the frequency of the injections. It is perhaps best to begin with 150-200 c.c., repeating every two to fourteen days as indicated by fluoroscopic examinations. In some cases, on account of adhesions, a partial collapse only can be obtained, and then a phrenicotomy will so raise the diaphragm that collapse will be obtained. I shall not go into the technic of pneumothorax except to say that it can be done without pain by the use of a local anaesthetic.

Since thoracoplasty comes under the head of major surgery, I will not take it up here, except to say that it has a great field for good, in otherwise hopeless cases.

Heliotherapy.

Heliotherapy has a place in the treatment of tuberculosis, but has been proved to be most useful in bone and glandular tuberculosis, and in tubercular peritonitis. When there is no fever, evidence of activity, or tendency to hemorrhage, it may be cautiously tried in pulmonary tuberculosis, but the pulse and temperature chart should be carefully watched. Sunlight stimulates the endocrines, improves metabolism, increases the erythrocytes and improves the appetite and digestion. In the absence of sunlight, or rather the facilities for the convenience of sun baths, ultra violet light, if used cautiously, and only in suitable cases, is beneficial. Heliotherapy in active pulmonary disease cannot be too strongly condemned.

Treatment of Symptoms and Complications.

Cough.—Much can be done by the patient himself in suppressing the desire to cough. If by persistence the cough can be controlled, spreading of the infection is lessened, and the lung gets more rest. It is remarkable to note how soon a disagreeable cough will subside by absolute rest in bed. If, however, these means do not control the cough sufficiently to allow rest, codeine, grs. one-sixth to one-fourth, in one drachm of elixir terpin hydrate may be given every three or four hours for a limited time. Morphine acetate, grs. one-thirtieth, in elixir terpin hydrate, may be used instead, if a stronger sedative is needed. It is well always to remember the danger of the narcotic habit, and for this reason to use all opiates

most cautiously, since there is more danger in the use of these drugs in a chronic disease like tuberculosis, than in an acute infection of the respiratory tract. A stimulant expectorant should never be used if there is a tendency to hemorrhage.

Hemoptysis.—Even blood tinged sputum should not be treated lightly. A few days of absolute rest in bed and perhaps a cough sedative, such as codeine, may be all that is necessary. It is also necessary to prevent constipation and straining at stool. In a hemorrhage of half ounce or more, the pillows should be removed, and the patient made to inhale an amyl nitrite pearl, three to five minims. Feed crushed ice for cough. If the blood pressure is over 100 systolic, sodium nitrite, grs. 1, should be dissolved under the tongue every four hours as long as the systolic pressure remains over 100. If there has been a high pressure, it should not be reduced too much. The bowels should be kept open with a daily dose of salts or oil. Give codeine, grs. ¼, to be repeated as needed. Calcium lactate, grs. 10, should also be used before meals for three days. Stop all citrus fruits, and hot drinks, and give only soft diet. If the hemorrhage persist and cannot be controlled, and if the site can be located (usually by the gurgling sounds on one side), pneumothorax may have to be done. Hemorrhage cases should be kept in bed for three weeks after all signs of blood in the sputum have disappeared. While hemorrhage, *per se*, is seldom fatal, inspiration pneumonia often follows, and the disease spreads. It is not thought wise to use morphine in these cases. Some authorities prop hemorrhage patients in a half reclining position, claiming this does not raise the blood pressure. If this could be proved to be true, the patient would be more comfortable in this position.

Loss of Weight.

In a patient whose weight is not above standard, loss of weight can usually be prevented by more rest in bed (or at least restricted exercise) and possibly by advising a change of diet, or one more varied.

Night Sweats.—Night sweats can often be controlled by alcohol rubs and sponge baths. It is sometimes necessary to give atropine sulphate, grs. 1/100 to grs. 1/150, before bedtime. Elimination should be kept up by the use of laxatives and plenty of water.

Fever.—Fever is treated by strict bed rest. Sponge baths, alcohol rubs, and an ice-cap to head may be used, and the patient should be kept on a soft, or liquid diet.

Constipation.—It is best to correct constipation by a proper vegetable and fruit diet, together with the use of bran, and an abundance of water. Mineral oil in one ounce doses once or twice a day, or cascara may be used.

Digestive Disturbances.—An upset digestion may sometimes be relieved by having the patient fast for twenty-four hours, then using a liquid diet for several days, gradually resuming the usual diet. A large percentage of tubercular patients have a hypochlorhydria which is relieved by dilute muriatic acid in doses of fifteen to twenty minims, in a glass of water to be sipped with meals. A gastric analysis is frequently necessary to determine whether an acid or alkaline should be used.

Enteritis.—Tubercular enteritis is usually a terminal condition, complicating a far advanced pulmonary disease. The diet should be bland, consisting of boiled or citrated milk, strained, well cooked cereals, soft toast, baked potatoes, gelatine, boiled custard, or ice cream.

It is believed that general body radiations with the sun lamp, using intensive applications of the rays to the abdomen, is of benefit. Calcium lactate, grs. 10, before meals, is advised.

Tubercular Laryngitis.—The patient should be put "on silence" as soon as the larynx shows evidence of involvement. The use of pencil and paper, instead of using the voice in any way is advised. Rest in bed, with absolute rest of the larynx by silence, will relieve mild cases. In a larynx not ulcerated, a spray of 1 per cent guaiacol and menthol, in oil of sweet almonds, seems beneficial. An aqueous solution of formalin, beginning with ½ of 1 per cent, applied directly to the larynx twice weekly, gradually increasing the strength till six or eight per cent strength is used, seems to do good. In ulcerative cases, the electro-cautery, cautiously used, gives better results than any other treatment. It is often necessary to use an anaesthetic spray to the throat before meals, on account of the pain induced by deglutition. A 2 per cent butyn solution is fairly effective. With the treatment now advocated, tubercular laryngitis, even if occurring in far advanced cases, as a usual thing is not so serious as it once was.

Pleurisy.—Pleurisy, with or without effusion,

is a frequent complication of pulmonary tuberculosis. The pain is often relieved by a tight binder around the chest. Painting with iodine, or rubbing with chloroform liniment also helps. Adhesive plaster strapping immobilizes the side, but causes as much discomfort, frequently, as does the pleurisy, and so for this reason is rarely used. Aspirin or codeine, if necessary, may be given. If effusion takes place, the fluid should *not* be touched unless the pressure becomes too great, when only a small amount should be drawn—enough only to relieve the symptoms. It is believed that the occurrence of the fluid is nature's effort to put a diseased lung at rest.

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DISCUSSION

DR. W. E. BROWN, Sanatorium: There is nothing of any material interest that I can add to Dr. Wright's paper, but I made a note of one or two things that I should like to emphasize.

We know that absolute relaxation, rest in bed, is the foundation stone for recovery from this disease, and whenever in doubt as to whether the patient should be gotten up out of bed and put on exercise you would do best to err on the side of rest.

Dr. Wright has gone somewhat into detail on the preparations for sleeping in the open air. It is necessary to know these details, for if you put a patient on a porch and proper preparation has not been made you are apt to do the patient a good deal of damage by getting him severely chilled.

I can not say that I altogether agree with him on the question of posture. There is no question in my mind that the side on which the patient lies does the most breathing, due to increased action of the diaphragm. The diaphragm of the upper side becomes more or less fixed in its position and its excursion is materially lessened, whereas on the lower side the excursion of the diaphragm is nearly doubled. If the disease extends into the base of the lung, I would certainly not put the patient in such a position that it would work the diseased organ more than necessary. Therefore, if postural treatment is to be carried out, and the base of the lung is involved, I think that phrenic evulsion should be done. I used to insist, in cases of pulmonary hemorrhage, that the patient lie on the affected side. In very many instances the cough was increased, and sometimes there was another hemorrhage. The patient would argue that lying on that side made the cough worse, and I would argue that it was imagination, but I have come to the conclusion that the patient was right and I was wrong.

DR. J. BOLLING JONES, Petersburg: No principle has been added to the treatment of tuberculosis in thirty-five years. You have effected those principles, but nothing new has been added. It was my pleasure to see the first tuberculin sent to America, to Dr. James Whitaker. He had been a student of Koch's. During the year that followed he had tuberculin given to everybody in the ward, regardless of what was the matter with him. So I learned my lesson about tuberculin.

When I began practice, the first two cases I saw were tuberculosis. The greatest comfort in the world to me today is that both are living today, both are healthy, both have raised healthy families. It is a great comfort to me when I diagnose or recognize tuberculosis. Naturally, they are depressed; it is a thing that requires readjustment of their lives; but we can give them much encouragement.

DR. WRIGHT, closing the discussion: I knew Dr. Brown's attitude on posture before I wrote this paper, so I am not at all surprised to hear his statement.

The only reason—or, rather, the main reason—I had for reading this paper is that I do not believe the average man realizes the importance of a prolonged rest in tuberculosis. About the time a patient gets fat and begins feeling good and as if there is nothing in the world the matter with him (to my mind, a false convalescence), he feels that he ought to get out and go to work. If anything I can say will convince anybody that that is one of the most dangerous times, and the very time when he needs to hang on longer, I shall be glad.

INSTRUMENTS OF PRECISION ESSENTIAL FOR CORRECT DIAGNOSIS AND TREATMENT OF CHEST CONDITIONS.*

By DEAN B. COLE, M. D.,
and
EDGAR C. HARPER, M. D.,
Richmond, Va.

Since the discovery of the stethoscope by Laennec in 1819, the clinician has been constantly seeking other instruments of greater precision which may be advantageously used in chest diagnosis. This instrument revolutionized the knowledge of thoracic pathology through the easier detection of heart murmurs, rales and other adventitious sounds and permitted their correlation with disease entities and necropsy findings. It cannot, however, always be depended on even in the hands of the most skillful to show the minute changes so necessary in diagnosis of early chest diagnosis.

Laboratory studies by Pasteur and Koch in the latter half of the nineteenth century gave

*Read at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

a boon to physicians in the study of lung disease, stimulating their interest and increasing their desire to perfect other methods of arriving at accurate and definite differential diagnosis. The discovery of the tubercle bacillus in 1882 by Robert Koch put the microscope into the hand of the clinician and permitted him to find the newly discovered organism in the sputum of his patients. When the bacillus could be demonstrated, precision of diagnosis was unquestioned.

In 1893 Roentgen developed his ray, not realizing that in a quarter of a century chest diagnosis and treatment, especially lung disease, would receive an impetus scarcely equalled in the previous history of medicine.

Mackenzie contributed much to the diagnosis and treatment of heart disease. To him we are indebted for the development and use of the polygraph and sphygmograph, forerunners of the electrocardiograph. In recording the rate, rhythm, and condition of the myocardium, the electrocardiograph far surpasses any other instrument. It gives a graphic picture of cardiac irregularities that cannot otherwise be comprehended. Each wave conveys graphic messages that may be of the utmost importance in diagnosis and prognosis.

The routine use of the sphygmomanometer for diastolic and systolic blood pressure measurements will frequently direct our attention to renal and cardiac sclerosis and cardiac hypertrophy.

Basal metabolism determination, so essential in diagnosis and treatment of thyroid disturbance, is frequently most helpful in differentiating a border line thyroid toxicity from an early tuberculosis or other obscure infection.

The ophthalmoscope for studying eye grounds is too little used. No cardiovascular examination is complete without it for here frequently the first manifestation of arteriosclerosis is found.

Stereoscopic films of the chest in suspected pulmonary disease have proven so useful that it is now a routine measure in the hands of those who wish to make a complete and accurate diagnosis. The earliest forms of tuberculosis and other lung diseases frequently show very slight changes on physical examination and their interpretation is often very difficult. Properly taken films, however, will almost invariably show the earliest exudative lesion before the advent of rales or the destruction of lung tissue. Serial plates taken during treatment are often better guides to the patient's progress than are symptoms and physical signs. Heavy lower lobe bronchial markings point an accusing finger to the upper respiratory tract and demand thorough examination of nose, throat and accessory sinuses.

Fluoroscopy is one of the best and least technical methods of examination of the thoracic contents. Its usefulness in pulmonary disease is limited to rather gross changes but it is invaluable in certain conditions. Its routine use in artificial pneumothorax is so important that we consider it a part of the procedure. Every patient is screened before air is given and occasionally we have patients come in midway between refills for check-up. This is a necessary precaution where the pneumothorax patient is doing full time work. We have learned to our sorrow that mediastinal shifting, undue stretching of adhesions, and small amounts of fluid are frequently not manifest on physical examination, nor are we able to judge the amount or area of collapsed lung by ordinary examination. By means of the fluoroscope, visualization of bronchial dilatation or obstructions after the administration of iodized oil, either in diagnosis or treatment of these conditions, is possible. The presence of a pleurisy with effusion can be differentiated from consolidation of the lung. Dense infiltrations in the lungs, caused by tuberculosis, neoplasms, abscess, and unresolved pneumonia, may occassionally be diagnosed, but for the most part stereoscopic films are essential. Early pulmonary tuberculosis cannot be diagnosed but frequently a lagging apex, a sluggish moving diaphragm or areas of emphysema will herald the approach of clinical disease. Opaque foreign bodies in bronchi or trachea can usually be seen and non-opaque ones suspected by areas of emphysema or atelectasis distal to the obstruction. Mediastinal suppuration, neoplasms and esophageal or tracheal stenosis can be seen by use of some radiopaque medium. Its use in cardiovascular examinations is extremely important. With it we are able to visualize the aorta, heart and mediastinum. By means of the orthodiagram we are enabled to study graphically greater detail and accuracy in cardiac enlargement.

A seven foot plate is often helpful in determining measurements and contours for leisurely studies and permanent record for future comparison.

Aortic insufficiency is suspected by widening of mediastinum and marked enlargement of left verticle to left, giving the so-called shoe shaped heart. Mitral stenosis causes enlargement of the left auricle and pulmonary conus. Mitral insufficiency produces enlargement of left auricle and generalized enlargement of entire heart. The characteristic lesion of hypertensive heart disease is enlargement of left ventricle, the degree depending on severity of sclerosis. Aortic dilatation shows shadow of arch to right of sternum and appears thickened and widened. An aneurism is seen as a pulsating mass arising from the aorta and is usually not difficult to diagnose unless it is filled with a clot which prevents its pulsation.

Pericardial effusion gives a tremendous enlargement of heart which is roughly triangular in shape with its base down; sometimes the outline of the heart may be seen within the shadow; generally there is some obliteration of the acute angle formed by right border of the heart and diaphragm.

The electrocardiograph unfortunately has not won the popular favor as did the X-ray. It too has an important message for the alert physician, and its constant use will sharpen the diagnostic skill of the cleverest. Too often a loud musical murmur has so biased the mind and perception of the examiner that the all important and essential factor of cardiac reserve has been forgotten. No longer can we make the convenient division of those who need rest and digitalis and those that do not. We have in the galvanometer an instrument of precision that is exceedingly helpful in diagnosis, therapy control, and prognosis. This is especially true of those diseases that are most difficult to diagnose by ordinary methods. The alarming increase in cardio-vascular disease in the last decade should lend impetus to our efforts to prevent and cure this important group of diseases.

No instrument, however precise, will ever be able to supplant a careful history and a painstaking physical examination in diseases of the cardio-vascular or pulmonary system.

Professional Building.

DISCUSSION.

DR. DEAN B. COLE, Richmond: I have very little to say regarding this paper. As you have already discovered, there is nothing new that Dr. Harper attempted to bring out; he endeavored, rather, to call your attention to the systematic use of some of the procedures that many of us have at our disposal. I think too frequently we are inclined to think that the X-ray man or some other is going to make a diagnosis for us. If all of us would use the facilities that we have and use them systematically and study our cases very carefully, I think we should make many fewer mistakes in differential diagnosis. It was with this in view that this paper was written.

SOME PHASES OF RHEUMATIC DISEASE.*

By T. DUCKETT JONES, M. D., Boston, Mass.

There is little doubt but that the term rheumatism is one which, alike to layman and physician, conveys a sinister picture, the results of which, should the disease progress to its limit, means either hopeless crippling or death itself. There are cures, at times, almost miraculous, but more often there is the dark outlook, which we are often unable to alter, despite the variety of procedures which we attempt or the endless amount of time and thought which we may give to the individual case. During the past ten years or so, we have become "rheumatic minded." The study of the varied factors involved in the arthritides is being pushed with all possible speed, as our knowledge is increased in bacteriology, immunology, pathology, metabolism, nutrition, and general medicine.

It is my intention to consider very briefly several phases of rheumatic disease, with the term rheumatic limited entirely to the syndrome clinically classified as Rheumatic Fever, Sydenham's Chorea, and at least a certain percentage of cases of tonsillitis, with the consequent and subsequent heart damage. These cases are an enormous group, responsible for the far greater number of deaths from heart disease in individuals under forty years of age.

Much clinical information is at our finger tips. The typical case of Rheumatic Fever or Articular Rheumatism presents a picture familiar to each of us, though it is not thoroughly common today. The age incidence and climatic, seasonal and geographic characteristics have received widespread attention. The resulting cardiac damage with the various types of heart irregularities, mitral and aortic valvulitis, and pericarditis, with death at an early age, is recognized by all well-informed physicians. These things and others we know, but concerning many vital points we are much in the dark. For instance, why do two patients, one with

*From the Medical Clinic of the House of the Good Samaritan. Read at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

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severe mitral stenosis and the other with but little valvular disease, die with the same signs and symptoms? What is the cause of recurrences? Is there ever a period when the disease is inactive? What nutritional, metabolic, and racial factors are present? Why are we unable by known immunological reactions to gain some index of the patient's status at any given time in the disease? Granting that streptococci, probably varied in type, possess antigenic properties, is the clinical improvement, often seen, a process of desensitization to the streptococcal antigen or one of neutralization (toxin-antitoxin reaction)? When we know some of these and other factors, and only then, will we begin to get an idea of this complex syndrome. The phases of rheumatic disease which I should like to bring to your attention are not the result of laborious laboratory procedures, but merely clinical impressions, the result of observing over a period of time a large number of children and young adults in the various stages of the disease. I have no new ideas or data to present, but merely wish to emphasize recognized lines of thought.

1. The Question of Active Infection:—

In many diseases it is difficult to determine just when the process has subsided and it would be wise to allow the patient up, and to return to his usual mode of life. This is doubly difficult in a disease where there is no known specific etiological agent, and where we have no measure of the immune processes and no proven knowledge of the means of the subsidence of the infection. An acute case of polyarthritis, with fever and leucocytosis, responds to rest and salicylate therapy, has no recurrence, the fever and leucocytosis subside, and no evidence of heart damage develops. We let him up. He does well, but a month or two later we are amazed to find that he has developed evidence of slight valvular disease. In other words, the exudative process present had affected the endocardium, and with improvement and the natural process of repair the proliferative mechanism has resulted in definite and permanent valvular heart disease. Should he have been kept in bed longer? What criteria tell us when the exudative stage ends and the proliferative begins? There are no absolute criteria. Each case almost seems to be a law unto itself. And yet, we feel safer subjecting patients to long periods of bed rest, and they seem to do better clinically, if we err on the side of the rest rather than activity.

The monocyclic polyarthritis (Swift[1]) is not so difficult, but the polycyclic type troubles us sorely. The atypical types also cause concern. In New England, rheumatic heart disease represents about 40 per cent[2] of all heart disease. In Virginia, the percentage is about 20[3]. The further south one goes, apparently the lower the number of such cases. In addition to the decrease in the number of cases of the rheumatic types of heart disease, there is a decided decrease in the number of cases having Rheumatic Fever. In fact, it is rather surprising that the rheumatic types are as high as 20 per cent in Virginia. Rheumatic Fever is not common, and Chorea is still rarer. The number of cases of Rheumatic Fever treated at the Massachusetts General Hospital is today about half what it was ten years ago, and yet the number of individuals with rheumatic heart disease remains high. I do not presume to explain this discrepancy, despite it being a very real one. We are all familiar with the cases with vague joint pains, often growing pains in children, cases that later develop evidence of heart damage. It is this group as well as those who several months before had definite rheumatic infection, that we must struggle with, and struggle in more ways than one, for, even after we have come to the conclusion that the patient should be in bed longer, it is often all but impossible to make him or his family see the importance and reason in such therapy. There are several factors which, should any one of them be present, mean undoubted continuous infection.

a. Fever: A low grade fever may be run for months, and during its persistence the patient should be kept as quiet as possible. As slight a rise in temperature as 99.4° (mouth) or 100.4° (rectal) must be considered as probably significant. It has also proven a safe rule to have each patient stay in bed several days who shows an elevation in temperature, however remote its cause.

b. Leucocytosis: While varying between 14,000 to 20,000 or higher when acutely ill, the white blood count tends to remain at a slightly elevated level during low grade infections. A white blood count between 12,000 and 15,000 in absence of other findings is incriminating evidence, and its return to normal a fair, though not invariable, guide to therapy. Swift[4] has

pointed out the fact that relapses or recurrences are usually heralded by a rise in white blood count curve.

c. Weight: Of value in those cases who are underweight is their weight curve. Wide daily variations occur, but once there is a steady continuous gain in weight, the patient usually improves. This may occur only after the patient has been made to stay in bed for a number of months, at which time the temperature curve often seeks a slightly lower level, the white blood count may decline, and the weight increase at the rate of two to four pounds a week.

d. Pulse Rate: Often it is difficult to consider the pulse rate of value, unless the patient is in bed and it be possible to rule out neurogenic and effort syndrome influences. I have not found it very helpful, there usually being little question of infection, where the pulse rate is significantly increased.

Of the host of other factors which may be mentioned are nose bleeds (which we find occur very commonly, without trauma, during low grade infections), pericarditis, pleuritis, vague gastric disturbances, anemia, nodules, and a small number present respiratory charts which show rates between 35 and 50 respirations per minute over a period of months, without other conspicuous evidence of infection. In addition, there are those cases recovering from severe infection, and even heart failure, who, eight or ten months later, show no more evidence of infection than pallor, possibly a very slight anemia, and a lack of gain in weight. This latter type is the one resulting in the most conspicuous clinical improvement, should it be possible to restrain their activity sufficiently long. It may mean a question of well over a year in bed.

I should like to add the warning that there is something far more important than the presence of the various diastolic or systolic murmurs when an individual afflicted with the rheumatic syndrome consults us. These findings with perhaps heart size have been much over-emphasized. The functional capacity of the individual's heart and the presence or absence of cardiac failure are, of course, important, but of prime importance is the decision after careful consideration of whether or no there is any evidence of active infection.

2. Chronicity:—

Of the chronicity of rheumatic disease we are well aware. The number of years that a slowly progressing rheumatic type of mitral stenosis carries on is well recognized. On the other hand, we see those cases who go continually down hill once the process has become established. We know little of what is going on in the heart from the time the patient has rheumatic fever until he dies from congestive heart failure 15 to 20 years later. In some way the disease progresses, until the damage has reached such a degree that the heart can no longer take care of the body needs, and failure results. This damage is not, at present, measurable with any of the clinical or pathological technique which we know of. It would seem likely that what happens is that there is a frequent, perhaps even continuous low grade infection present. The definite recurrences with joint pain, fever, etc., are common, and yet there are many cases showing little evidence of infection, especially in the South, who exhibit the fact that the disease is a progressive one. I have tried to bring out the important facts relative to evidence of infection, and, but for lack of time, I might profitably give the clinical records of a few cases who have had to be restrained at rest for long periods of time, but cases that finally responded and whose subsequent clinical improvement have justified the period of absolute invalidism. In this respect, as well as others, the disease is closely parallel to tuberculosis.

Do not become too discouraged about the difficulty of giving these patients the necessary months of bed rest. In private and general practice, it is extremely difficult to obtain for these patients the best possible therapeutic measures. In the more important cases there is often little evidence of infection, and the family and patient are restless for activity, and, as a rule, are not prepared for the economic situation. Should another physician see the patient, who is not thoroughly conversant with the evidences of low grade active infection, the goose is usually cooked, for the family will often welcome his advice. Nevertheless, the fight is worth while. Long bed rest under as hygienic conditions as possible, with well-balanced diet (for as yet we do not know the role of nutrition in these cases), and probably actinic rays, are the best known therapeutic measures, and we are fully justified in seeing that each patient receives them, despite the individual difficulties.

3. Salicylate Therapy:—

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The practice of giving large doses of salicylates in active rheumatic infection is a general one. There is no question about the almost specific effect which the drug exerts upon the exudative phenomena of the disease. The subsidence of fever and the comfort of the patient, with the resultant clinical improvement, are striking, and renders our faith in the drug, in its various forms, as well founded. There are, however, definite dangers in its improper use, and of these I should like to speak briefly. There has grown up a practice in the past few years of giving salicylates in moderately large doses over a long period of time. Some observers have even thought that it might be used as a prophylactic in the prevention of recurrent rheumatic infection. These individuals are, I believe, off on the wrong foot. Swift[5, 6, 7] has brought out some very good points concerning the role of salicylates. He has shown that in animals rendered sensitive to nonhemolytic streptococci there is a depression of the formation of immune bodies, when salicylates are given coincidentally. In addition in animals in which he has produced arthritis, the number of severe joints developing is decreased by salicylates, but there is found an increased number of mildly inflamed joints. In serum disease in humans, the use of salicylates early after the inoculation of the horse serum decreases the number exhibiting polyarthritis, but, at the same time, there is probably a reduction of the immune processes. While neither the serum disease in man nor the animal experimentation exactly duplicate the rheumatic disease in humans, there is sufficient relationship between them to warrant our consideration.

Certain processes occur when we give sufficiently large doses of the drug. Should the individual have a very acute illness, the administration of the drug to the point of salicylism results in a return to normal of the temperature, and a reduction in the white blood count from 14,000 or 20,000 to normal. Should there be a rapid clinical improvement, cessation of the drug would result in little difference. The white blood count in these individuals usually remains down. However, in the continuously active, low grade infections, the white count may return almost to its previous level and there may be a slight rise in fever. Salicylates over long periods of time in these individuals give us a false sense of security. I have frequently seen a definite joint swelling result, along with the coincident rise in leucocytes, in patients who had been on the drug from two or three to six months. In cases, in which a test temperature record is being made to determine the presence or absence of active infection, and a white blood count is being made for the same purpose, be careful to see that the patient is not receiving salicylates, or else the tests are of no value. Since it is important that we know when there is infection present, we should not mask the possibility of symptoms or findings occurring which would tell us whether or not the patient should be having bed rest.

I do not wish to be misunderstood concerning this question. I do not decry the use of large doses of salicylates in the acutely ill; on the other hand, I strongly urge them. At the same time there seems some basis for the belief that they do not cause their improvement by increasing the immune processes, but rather depress them. Whether or not any anti-rheumatic drug depressing antibody formation also depresses the potency of the responsible antigen is not known, but it is possible. However, I do say that the drug should be used to make the patient more comfortable, and as it does not cure the disease, as has been pointed out by Swift,[8] its withdrawal is advisable as soon as practical, in order to avoid a false sense of security and the masking of important symptoms.

Summary.

Some of the evidences of infection in rheumatic disease have been outlined, together with the importance of the recognition of the fact that these evidences of infection occur over a long period of time, and emphasis is placed on the necessity of giving these cases long bed rest. There are also included some notes on salicylate therapy.

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25 *Binney Street.*

DISCUSSION.

DR. J. EDWIN WOOD, JR., University: It is true that any of us are able and anxious to make a diagnosis in a frank case of inflammatory rheumatism. On the other hand, I think we are still a little backward in the South in paying attention to growing pains in childhood, to the dangers of tonsillitis, and perhaps to certain cases of pleurisy. We have just begun to scratch the surface in the clinical manifestations of so-called rheumatic infection. Knowing that mitral stenosis has no other causes than rheumatic infection, we are evidently missing the early part of the disease. This is particularly true, I believe, in the South, where a typical textbook picture of inflammatory rheumatism is unusual. With a twenty per cent rheumatic heart-disease ratio in this State, this infection does present a problem. Further, when you remember that the great majority of rheumatic cases occur in childhood, cutting our young ones down, giving them a short and unhappy life, it is more than a twenty per cent problem. I think our attitude in the South at present should be a little bit more than suspicious of the manifestations Dr. Jones has mentioned; and, if we err on the side of resting the patient too long in bed and being a little too cautious, maybe we have done the right thing and nothing else. After all, until we clearly understand the mechanism of the infection the best we can do is to be careful.

We are indebted to Dr. Jones for coming down from Boston to give us this stimulating and yet pleasantly conservative discussion of rheumatic disease.

LUDWIG'S ANGINA: CASE REPORT.*

By E. G. GILL, M. D.,
and
W. R. WHITMAN, M. D.,
Roanoke, Va.

Ludwig's angina is characterized by an acute spreading infiltration of the soft tissues starting in the floor of the mouth and submaxillary region which binds all the structures into a hard, board-like mass. The space[1] into which the infection is localized has for its floor the mylohyoid muscle, its lateral walls, the bodies of the mandible, its posterior wall, the muscles which unite to form the base of the tongue and the deep part of the submaxillary gland, and, as its roof, the tongue and the mucosa covering the floor of the mouth.

ETIOLOGY: The most frequent starting-point[2] of the infection is from a suppurating submaxillary lymph node or a collection of pus in the floor of the mouth. The general opinion is that this form of infection is usually due to streptococcus.

PATHOLOGY: The process[3] is essentially a cellulitis. The fact that pus is not found in many cases on incision does not prove that there is phlegmonous swelling without pus formation.

SYMPTOMATOLOGY: The onset[3] is marked by difficulty in talking and swallowing, pain in the floor of the mouth and salivation. Elevation of the tongue with redness and edema of the mucous membrane over the involved area is characteristic. The swelling has usually a board-like hardness. Dyspnea from edema of the glottis may prove alarming and necessitate a tracheotomy. The temperature is not high in most cases, ranging from 99 degrees to 103 degrees F. The conditions from which it is to be distinguished are quinsy and retropharyngeal abscess.

PROGNOSIS: Mortality is high, especially if treatment is not instituted early. Various authors have placed it at about 50 per cent. Death is usually due to edema of the larynx or broncho-pneumonia.

TREATMENT: Incise[3] promptly through the swelling in the submaxillary region using local anesthesia. Thomas states that the finger should be passed upward into the wound until only mucous membrane intervenes between it and the mouth. Tracheotomy is of life-saving value when there is edema of the glottis.

CASE REPORT: Patient female, age thirty-two, was admitted to the Gill Memorial Eye, Ear and Throat Hospital, April 4, 1929.

Chief complaint: Severe pain under left jaw and throat, unable to swallow; voice was muffled; saliva was dripping constantly from the mouth.

Past history: Patient states that the left side of her neck began swelling ten days prior to admission to hospital. Three days after the swelling begun, she had a wisdom tooth extracted. The swelling and pain has steadily increased.

Physical examination: Heart, lungs and kidneys normal. Nose and accessory sinuses negative. The mouth could be only partially opened. The tongue was swollen and pushed upwards and to the right. The mucous membrane in the floor of the mouth was red and swollen and of board-like hardness. The temperature on admission was 101.6 degrees; leucocyte count 9,200.

TREATMENT: Ice-packs were applied to swollen parts constantly. Morphia sufficient

*Read by title at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

XUM

to keep patient comfortable was administered. Twenty-four hours after admission, patient's condition became much worse. The swelling in the floor of the mouth spread rapidly and forced the tongue out of the mouth. Respiration rapidly became embarrassed. Dr. W. R. Whitman saw the patient in consultation. An immediate operation was performed by Dr. Whitman, which consisted of a wide incision through the swelling in the left submaxillary region. Blunt dissection uncovered an abscess cavity near the floor of the mouth. About one ounce of pus was excavated. The dissection was continued up to the mucous membrane in the floor of the mouth. Wound was packed with rubber drain and iodoform gauze. The dressings were kept moist with warm boric acid solution. The alarming symptoms, especially the dyspnea, were promptly relieved. The patient made a complete and uneventful recovery.

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THE PHYSICIAN'S PART IN THE PUBLIC HEALTH PROGRAM.*

By B. B. BAGBY, M. D., Courtland, Va.

In a paper of this length I have time to discuss only a small part of the physician's responsibility in public health work. I shall, therefore, confine this paper to only two phases—ones that will require on the part of the physician only a minimum amount of time and expense.

Statistics show that man's life has been lengthened nearly nine years in the last quarter century. The average age at which a citizen of the United States died in 1901 was approximately forty-nine years; in 1926 it was about fifty-eight years.

With a careful study of our case histories, those of us who have been practicing medicine for twenty-five years can readily see how this change has been accomplished.

When I first began to practice medicine in 1904, nearly all of my cases in the summer and fall were confined to malaria, typhoid, dysentery, cholera infantum and worms.

In the spring of 1909 I moved to West Point, Va., and began to keep careful case histories. During the first five summer and fall months of that year my records show that I *visited* 158 patients, and 108 of those were sick with one of the preventable diseases mentioned above. Happily, no such state of affairs now exists in West Point—which is as it should be. The incidence of communicable disease is now generally regarded as an index of the sanitary intelligence which obtains in a community, and, in the event of a low sanitary intelligence quota, may properly be regarded as more or less a reproach to the sanitary instructors of that district. By sanitary instructors of that district. By sanitary instructors, I mean the physicians serving that community.

*Read at the sixtieth annual meeting of the Medical Society of Virginia, in Charlottesville, October 22-24, 1929.

PREVENTIVE MEDICINE MORE IMPORTANT

There are many other diseases besides filth-borne diseases that can be prevented; in fact, perhaps the majority of diseases except old age are more or less preventable, and even old age can be delayed and made more useful and enjoyable by a well regulated hygienic life.

Each mammal except man lives approximately five times as long as it takes him to get his growth. Why should not man live equally as long or about 120 years? God says, in Genesis 6:3, "the days of man's life shall be 120 years."

If we could put into practice the knowledge we now have for the prevention of diseases, I confidently believe that man's life would easily be lengthened another nine years in the next quarter century.

All of you will thus agree with me that there is a vast field for preventive medicine, and that the most important factor in developing this field is the education of the public in modern health principles.

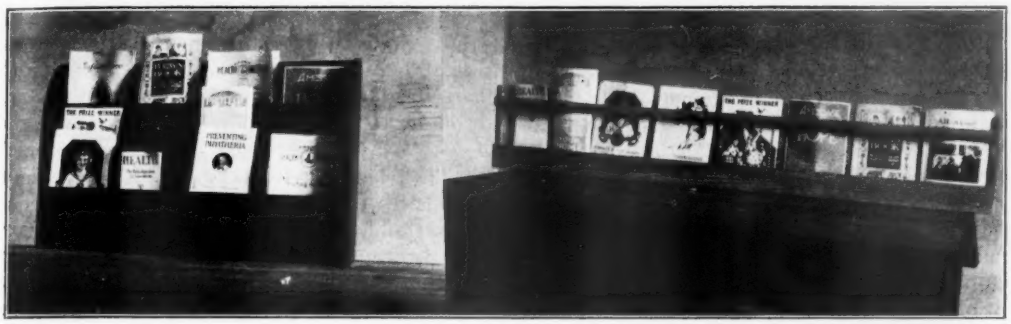
Whose duty is it to disseminate this knowledge if it is not the duty of the physician? The very word "doctor" means teacher.

DISTRIBUTION OF HEALTH LITERATURE

The most effective teacher is the one who can interest his pupils in supplementary reading.

The waiting room of every physician should contain a pamphlet rack filled with health literature. This rack should be in full view of the patient and provided with some such sign as, "For Free Distribution." It should be the duty of the physician's office assistant to see that this rack is kept filled with the

literature most suitable to the physician's practice. The average patient will be more interested in almost any current health bulletin than he is in the average, out-of-date magazine usually found on the doctor's table.



The rack on left can be bought from the Metropolitan Life Insurance Company for $9.00.
The rack on right was made out of scrap lumber by the boy at a filling station at a cost of fifty cents.

Patients should not be allowed to leave the office without being given the opportunity to carry home with them a piece of health literature dealing with the cause and prevention of their diseases.

Health pamphlets on many of the more common ailments can be obtained from the State Department of Health, the U. S. P. H. S., the U. S. Department of Labor, the American Child Health Association, nearly all life insurance companies, and other commercial firms.

Your local or State health officials will be glad to collect these pamphlets and send them to you on request.

Health Department Deserves Support

It has been by privilege during the last three years to act as health officer in Athens, Ga., where a specially intensive five years' program has been under way with the cooperation of an outside agency. Before this program began, the county and city health departments were spending about $.60 per person per year and this was increased during the period under discussion so that about $1.90 was being spent per person per year for local health services by the various agencies interested in the local health program. Under this program the actual number of deaths among white children in Athens was reduced more than one-half. To be exact there were fifty-nine deaths of white children under fifteen years of age in Athens during the last four years, while during the four years preceding the demonstration there were 136 such deaths.

What was done in Athens, Ga., can be duplicated in any other community if health work is adequately financed and properly conducted.

This remarkable work was accomplished by sticking closely to the highest medical ethics and advocating only these things approved by the best medical authorities.

Briefly our program was based on:

1. *Sanitation.* Every home not connected to a sewer was provided with a sanitary pit privy instead of a box and can privy, which had been found to be so unsatisfactory in that community.

2. *Food Control.* The standard milk ordinance was adopted and even all buttermilk and butter sold in Athens was made from pasteurized milk or T. B. tested cattle.

3. *Prenatal Care.* It was the endeavor to have every expectant mother under the care of a physician and to see that her urine was examined, her blood pressure taken, Wassermann made and pelvic measurements secured. In all cases, of course, literature on diet and other hygienic measures was given patient.

4. *Infant Care.* We tried to have nurse see every baby before the end of the first week. Not only was the mother urged not to wean the baby without the physician's consent, but to feed the baby only according to the physician's orders. The baby was weighed and examined regularly and sent to the physician on the first sign of sickness or lack of growth.

5. *School Care.* School children were given a thorough physical examination once every two years and urged to see a physician at once if any physical defect requiring correc-

XUM

tion was found. Each school was visited early every morning by nurse to detect any sick children. A child with a temperature of one degree above normal was carried home, put to bed, and mother was advised to call a physician.

For the last three consecutive years every white child in the city was examined by a dentist and received a certificate that all necessary dental work had been done. Other defects including impaired vision, congenital syphilis or orthopedic deformities were nearly as well handled by the physicians.

6. *Contagious Disease Control.* Of course the usual measures of contagious disease control were observed, such as isolating, quarantining, disinfecting, and vaccinating. In addition special work was done in T. B. and V. D. control.

All T. B. suspects and known contacts with T. B. cases from early infancy were urged to have an examination and, if found to be positive, were urged, with the physician's consent, to go to a sanatorium. A clinic was established to treat the indigent suffering from syphilis. A special effort was made to treat mothers and children.

7. *Health Education.* An intensive campaign was conducted to educate the whole people; health and physical educators were employed in the public schools; frequent health articles appeared in the local paper; thousands of health bulletins were printed and distributed, and clinics for physicians and dentists were conducted by men of national fame. As in all well conducted health work, nothing was attempted except with the approved of the medical society.

From the above synopsis of the work at Athens you can see that the chief aim was to put the patient promptly under medical care. Thus, the practice of the physicians who keep abreast of the times has been increased and their incomes have increased more than their practice. The average patient with hookworm, malaria, tuberculosis, rheumatism or syphilis, can seldom pay a physician. But when their diseases are eliminated these patients become an asset instead of a liability. As was to be expected, the best physicians of the community backed us in our work, while the quacks and incompetent physicians were unanimously against us. The health work as conducted in Virginia as well as in Georgia, deserves the support of the modern physician, and I am confident that the medical society will continue to give it increasing support.

Sanitation Campaign

At this particular time the State Board of Health is conducting a campaign to have the whole State of Virginia sanitated by 1931.

This will be just twenty-five years after the first case of hook-worm in this State was brought to the attention of the medical profession. At a meeting of the Medical Society in 1906, held on this campus, I presented to this body three patients infected with hookworm, and I thoroughly discussed the cause and prevention of this disease. Before the meeting closed several students in the medical school here were found to harbor these worms and within a few months the disease was found in practically every Tidewater county and in many other sections scattered throughout the State. Even before this we were taught in our medical schools that typhoid fever, cholera infantum, and dysentery were filth-borne diseases.

Is more than a quarter of a century necessary to eradicate these filth-borne diseases which can be so easily eliminated?

Whose fault will it be if these diseases are not eradicated in the next two years?

I will say without the slightest hesitation that it will be chiefly the fault of the rural physician. Of course the physician is not expected to go out and build toilets, but he is expected to appear before his Board of Supervisors to urge that they unite with the State Board of Health in employing a sanitation officer, and also he should be expected to help that sanitation officer by urging his patients to comply with the sanitary requirements of the State.

Fortunately for the community, most of the old mossback politicians who twenty years ago did not believe in "building privies for niggers," are now dead and a more progressive citizen is in control. These men believe not only in health work, but also in their family physician. The supervisors of any county in the State will employ a sanitation officer if the medical profession will unite enthusiastically in asking them to do so.

I hope the society will go on record as urging each component organization and each member to back to the fullest this campaign:

namely, THAT THE STATE MAY BE COMPLETELY SANITATED BY THE END OF 1931.

DISCUSSION.

DR. CHARLES R. ROBINS, Richmond: I am not going to tax your patience tonight by trying to discuss Dr. Bagby's paper, because it speaks for itself. I have known Dr. Bagby for many years; I remember his paper on hookworm, and I remember the excitement which it occasioned—largely, I think, because most of the doctors were like myself; they had never heard of hookworm before. His paper aroused a great deal of interest in the subject. We had studied hookworm in the classroom, but we did not realize it was in our midst. We do not hear much about hookworm today, and the reason is that in the enthusiasm imparted by this campaign on the hookworm, backed up by the millions of the Rockefeller Foundation, the work of eradicating it was carried on until (I hope) we have not many left in the South.

DR. R. L. RAIFORD, Franklin: I do not want to discuss this paper except to state to the audience that I am living in the county in which Dr. Bagby is doing this efficient work and that I am proud to be at a meeting at which such papers as those of Dr. Drewry and Dr. Bagby are presented.

There is no question in my mind that public-health work, if we qualify ourselves to carry on the progressive ideas in medicine, is bringing work to us instead of driving it away from us, as has sometimes been charged. I never expected to see such a spectacle as I saw a few weeks ago in our county when the question of whether we should continue our health work came up. The courthouse, which holds several hundred people, was packed almost to the doors, and the movement for the continuation of the health work was enthusiastically put across by unanimous vote. The physician who is not in sympathy with such work is destined to be a back number, and I wish that all of you could have seen the enthusiasm we had manifested that day.

DR. GREER BAUGHMAN, Richmond: I think that Dr. Bagby has one of the finest little tricks that I know. Personally, I have been a health worker for years. Every woman that comes to see me for the first time leaves my office with three things, two pamphlets—infant care, prenatal care, and a bottle for urine. The pamphlets, I am inclined to think, are more important than the bottle. The reason I do this is two-fold—to instruct her in what she should do and to save myself a lot of hot air. Dr. Bagby's idea is bigger than that of saving the doctor trouble; what he has done is to aid the other doctors in the community as well. While not as sensational as Dr. Bagby's hookworm paper, twenty-five years ago, in the end I think it will probably do more good. I have been attending this Medical Society of Virginia for many years, and there is not one single paper I have ever heard read before it that made a more dramatic impression on me than that hookworm paper of Bagby's. I remember it quite clearly and the sensation it created. I believe this scheme of distributing pamphlets will do even more good than the paper on hookworm.

DR. W. A. BRUMFIELD, Farmville: I am glad Dr. Bagby has said much of what I wanted to say about the health department being the only proper and legal advertising means for the physicians of this country. Those pamphlets all urge the patient to go to his doctor. Every lecture I hear urges the patient to go to his doctor. One state, in a recent study of the expenditures on public-health work, shows that the per capita expenditure for the cities of that state is $1.99, the average per capita expenditure for the counties of that state is $0.08, and for about forty of the counties the average per capita expenditure is $0.01. In all of this time that this growing expenditure has taken place in the cities at such a rapid rate the doctors have been moving from the country to the city, where more health work was done. There is a relation between those movements. The cities prosper far and away more rapidly than the country, and there is a relation between that expenditure and that prosperity. There is a circle there, and not a vicious one. A life insurance company recently reported spending $32,000,000 for the prevention of disease in twenty years and that the death rate among its policyholders has fallen enough more than the rate in the United States registration area to return it $75,000,000, or a gain of $43,000,000 over the $32,000,000 expenditure. If we are to do anything to greatly increase the prosperity of the country districts we shall have to give them more physicians, to render the service and teach them to demand and pay for it. Often they do not send for the doctor, because they can not pay for his services; they let a child have scarlet fever or diphtheria and recover if it will; they find, as one parent said, the undertaker cheaper than the doctor.

DR. R. D. BATES, Newtown: I want to say a word in behalf of Dr. Bagby's plea for rural sanitation. I wish to ask the country doctor to support this plea for rural sanitation. In my county, King and Queen, a comparatively poor county, we had Dr. Williams come down, and we went after the board of supervisors, and they put up the money for the sanitary officer, and what we have done others can do.

DR. J. BOLLING JONES, Petersburg: I want to tell of a little incident that has happened since I have been president of this society. Not very long ago I was invited by Dr. Raiford to come to his county. The facts are these. About five years ago the health conditions in Southampton County were extremely bad; the doctors were having a time controlling infectious and contagious diseases, typhoid fever and other things. The State Board of Health saw fit to appoint a health unit for Southampton County, including the doctor who preceded Dr. Bagby, a nurse, and a sanitation officer. About that time they were having one hundred and fifty cases of typhoid fever a year. Within five years they have cut the occurrence of typhoid fever to about five last year. The facts are that this has been accomplished gradually.

I want to say this in justice to what the doctors acted upon, that they felt they had gotten conditions so good that probably they need not expend this money any more for the county. The county was hard up. I think they honestly were led in their action in that way. They had had a meeting and the majority present decided that it was probably more now than this given county could stand and that it was probably wise and safe to do away with this county unit and that they could go back and take care of it themselves. Dr. Raiford and another doctor who had quit practicing medicine and probably one other gentleman, met. The whole courthouse was packed with people. A representative of the State Board of Health went down. These gentlemen presented their petition, giving their reasons for their action first. Then Dr. Raiford and

XUM

the other doctor who was not practicing medicine, spoke in favor of it. I spoke a word then, and their legislator. All over the hall mothers and wives got up and spoke. They had had typhoid fever in their homes and knew what it meant. It was extremely touching. And, lastly, the undertaker spoke in favor of it. Finally, someone called for an expression of opinion, and every person in the hall rose when those in favor of it were asked to stand. When the board met they voted unanimously to continue the health work.

QUESTION: Wasn't there a law passed some years ago by the legislature requiring a sanitary privy of some form to be installed?

DR. BAGBY, closing the discussion: Provided the board of supervisors had acted upon it.

I appreciate more than I can express the kind words you have spoken personally of me and for taking part in the discussion.

I want to say that I got this rack from the Metropolitan Life Insurance Company for nine dollars, and I paid a boy at a filling station fifty cents to make this one for me. It is made of two scrap boards, and my wife got a ten cent can of paint at the ten cent store and painted it. There is no reason in the world why you can not get one like it, have it made by some boy who takes manual training or by some carpenter, for fifty or sixty cents. Put it up in your office.

THE DOCTOR AS A MORAL LEADER IN HIS COMMUNITY.*

By HOWARD A. KELLY, M. D., F. A. C. S., Baltimore, Md.

Moral leadership is life's *summum bonum*, and in this great field medicine has never lacked her eminent exemplars: witness the list of great names which have come down to us through the ages. In our own day and country, we recall with unalloyed pleasure the brilliant galaxy but recently living in our midst, while we give thanks for those yet with us in the flesh. Without pretending to cite even a considerable number of personal friends, some of these cherished *dii minores* which spring first to mind as I write are Max Saenger, of Leipzig, August Martin, of Berlin, Jean Louis Faure, of Paris, Gerhardt Leopold, of Dresden, and Dame Mary Scharlieb, of London, and, *facile principes*, William Osler and William Welch, also Walter Reed, Thomas Addis Emmet, Joseph Price, and our William Howell, J. M. T. Finney, Max Broedel, William Holland Wilmer, Harvey Cushing, Hugh Young,—but I must not go on with a list which would ever keep lengthening and in which lapses might appear invidious distinctions. I could wish some time to make out another roll of the great natural scientists with whom I have been privileged to company in their varied walks of life, whether personally or in their writings, in astronomy, geology, herpetology, mycology, lichenology, and so on, but that is another story which must wait.

Let us then proceed to examine this question of Leadership. Is it, perchance, but an accident that a man becomes a leader? It is to a certain extent, but in its preeminent degree it depends on the ideal one sets before him early in life and steadfastly maintains, a goal calling all the while for unstinted hard work for its attainment. In a perhaps yet more creditable degree, some measure of leadership is attainable by even the average man who, possessed by an ideal, cultivates his spirit in a rigorous walk of self-judgment and ever works toward that as life's desideratum.

In the brief seventy-two years of my pilgrimage, I have become certain beyond a peradventure that such an ideal, imponderable though it is, alone constitutes the worthwhile satisfying life. Let us then examine this matter somewhat critically as we consider the several elements of my thesis—The Doctor a Moral Leader in His Community.

We have obviously before us: The Community, the Doctor, Leadership, Morals. The crux lies in the last, the governing life-giving principle, the very soul of the rest.

A Community is an interdigitated social body, a coherent group of units under a common governmental control, protected in their daily vocational pursuits from interference, while assuring liberty and fostering all that makes for the general welfare and happiness. Long and painful experiences have demonstrated that such a state necessarily demands the sacrifice of many of those heretofore highly-prized liberties and privileges the solitary man, or one in wilderness or state of savagery might demand—liberties permissible in a cruder life perhaps, but incompatible with the common good in any well-organized group of individuals. The word sacrifice just used is hardly appropriate, however, as there is really no loss, for out of the solicitude for the welfare of the whole body, there ever arises another attitude toward life in the appreciation of the cultural value of the mutual responsibilities with the associated enhanced opportunities for mental, moral, and spiritual development which constitute a new emergent

*Read at the meeting of the Seaboard Medical Association of Virginia and North Carolina in Newport News, Va., December 3-5, 1929.

in the recent sense. The best example of this fundamental truth is found in the married state where the manner of a man's single life, takes a Kopfheister, a bouleversement, turns top-y-turvy and is cast to the winds, and yet incalculably more accrues in return—love of wife, children, friends; in other words, it is creative and genders one of society's perfect units, the family, without which the state is impossible. A reason for this revelation lies in the commingling and continuous interchange of the infinite variety of personalities which go to make up a normal civilized society. In such an emergent community, chief among its assets and determinants, are three so-called professions—lawyers, ministers, and doctors. As these hold such critical posts, let us examine them, paying particular attention to the doctor.

The Lawyer, taking him as we find him abounding and superabounding in the political field and in our legislative halls, is apt as a speaker and trained as a logician, and is or should be an advocate of high moral standards, and in his contribution to our communal fund he ought to be interested chiefly in the framing and passage of good public welfare laws and in expunging effete and bad ones. His calling is also that of a zealous protagonist of civic righteousness, who utilizes every legitimate means to discover and bring to justice all violators of the law; he should never prostitute his high office by resorting to dialectic subtleties and tortuous devices to aid the guilty to escape. His, too, is the beneficent opportunity to effect amicable settlements of suits; above all should he ever lend a sympathetic ear to the distresses of the distraught poor. It should be his welcome, self-imposed task to see to it that our police force consists of men of high moral character and efficiency, rather useful builders-up of community morals than chasers after peccant violators of the code. When the legal profession, as a body, functions on such lines, we shall witness a transformed community. How shall we then rejoice as the ranks of our public officers, representatives, and senators are filled with such noble votaries of the Goddess of Jurisprudence. Shyster lawyers, together with quack doctors, in the ideal state depicted would be relentlessly pursued until, in utter despair, they abandoned their degraded activities.

And the Minister,—what of his vocation and responsibility? What do we expect from one who holds earth's noblest calling, closely linked with high heaven? His is the privilege of zeal in proclaiming the Kingdom of God upon earth! His is the opportunity to bring men to rank God's honor above the emoluments of their fellows; his to teach us to obey the injunction "in honor preferring one another;" to shepherd and build up in the Way, Truth, and the Life the followers of Christ. Again, his is the life of one who walks as in the presence of God, his to manifest before all men God's love and forbearance however widely they differ in creed. May we not also ask him to vitalize the social fabric by inculcating that fundamental duty and privilege of daily family worship and to teach men the widespread need of recognizing God's greatest gift—an indwelling Holy Spirit.

Last in our list looms up the Doctor, great in his opportunities, as he ever labors to break down our evil entailment of corporeal ills that haunt our faithless humanity. Regardless of his oft worn, protesting, and neglected body, we see him hasting to solace the sufferer wherever and whenever he calls for help. The weather, day and night are alike to him; no wonder he becomes the intimate, trusted, beloved friend of the family, often closer than blood. We see him presiding at the birth and easing the last hours of departing members, rejoicing when they rejoice and weeping with those who mourn. His is the high priesthood of a self-sacrificing order, ever sending out its votaries to the front line to die as they experiment with germs and poisons in the laboratory, or to sally forth at every beck and call of our frail humanity. In this scientific era, I only need to recall the vast array of his successes in medical science, which annually confer countless thousands of years of life upon his fellows, even while he ever remains careless and lavish of his own. May I not claim, then, that, both as scientist and humanitarian, the doctor is a supreme benefactor; ought not also his mede of kindly recognition to be the greater as his only request is that he be allowed to continue to serve? Like the lawyer and like the domine, respectively, the doctor is ever-increasingly conscious of his part as a moral leader. He knows full well the horde of diseases which originate in the will—ills subject to voluntary control whether individual or communal. Preeminent in this sad group

XUM

are syphilis and gonorrhea, typhoid fever, yellow fever, tuberculosis, rickets, and all bad and insufficient food diseases, milk diseases, diseases born of dust, foul streets, bad drainage and impure water, of improper exposure in occupational diseases, *et id hoc genus omne*. What addenda these to the therapeutics of our forefathers! What an idealist and what a propagandist the doctor must needs be!

Honored with such responsibilities, the doctor must be clean in mind and habit; as adorning a learned profession he must be a man of culture and wide reading, gripped by broad sympathies embracing the wide range of human interests. His home, wife, and children, must ever fill to overflowing the fountains of his affections, to inspire him in his daily rounds to minister to body, mind, and spirit of all "who are in sorrow, need, suffering, or any other affliction." With his fellow learned professionals, lawyer and minister, he has need to maintain a perpetual holy conspiracy for the peace of the community and to foster all that relates to communal welfare.

We have analyzed a situation and its relationships, but, after all, what is the good in mere analysis? Surely there is no therapy in diagnosis, no substantial aid in philosophy! In nature we see the scattered universes, however far-flung, one and all governed by the same laws in which there is no variance. In the moral realm we hold this unity of law in the material to be a parable of the higher spiritual realm and an evidence that the moral law also rules in heaven as on earth. Nay, rather, as we become aware of our Father's kind thought for our welfare, de we rejoice as we cry out that his "essential Deity is more inwardly known by a single display of his moral attributes than by all the overflows of his Omnipotence." Here is the key to the eighth and the nineteenth Psalms! As we have no power in the moral realm to satisfy conscience by our unaided "I will," let the leaders gild their messages with a "*Sursum corda*," "lift up your hearts," and let the antiphon come back, "*Habemus ad Dominum*," "we lift them up unto the Lord."

My philosophy, fellow craftsmen, praises pragmatism, the thing that works well, and as this faith in the grace of God has worked in my own life and wide experience, I am committed to it heart and soul.

This is not the time to enter into details, but let me, as my concluding *envoi*, commit you to the tutelage of a fine old doctor, the world's greatest physician and humanist, whose writings have been put into more tongues and are more read than those of any other doctor in any age. I refer to our patron saint, Doctor Luke, of the Gospel and the Acts, Gentile, Greek scholar, "beloved physician," a scientist in the highest sense, and one whose noble character and personality are autobiographically depicted in writings, in which he never mentions his own name. For obvious reasons, let me urge a closer study of Doctor Luke's writings, test him out, try his prescriptions and judge whether they can be labeled "pragmatic," i. e., workable. Note the sonorous introductory to the Gospel, eighty-two words (forty-two in Greek), conveying more clear conviction, thorough knowledge of facts, and competency to testify upon the greatest of all themes, than any equal number of words ever written spontaneously in any language upon any subject. Note, as you read his reports of the miracles of our Lord, the everywhere obvious unusual interest and keen eye of the skilled physician. Adolf Harnack, of Berlin, dean of higher critics, says on this head in his "Luke the Physician," "It is as good as certain from the subject matter and more especially from the style of this great work that its author was a physician by profession." I regret that I cannot pause to demonstrate this from the Greek medical terms used by Luke, and noted in a substantial volume as far back as 1883 by William Kirk Hobart who devoted his life to this study.

Pore over Luke until you absorb all his paragraphs, dwelling especially in the Gospel. Note the simple, natural, convincing flow of the narrative as he records the great events which had come within his cognizance. Note the sweet simplicity and exaltation of the family life of the Messiah when heaven first became inseparably linked with earth, when even angels, no longer able to hold their peace, rent high heaven with their rejoicings as they gave the news and sang their blessings, and you will find the song of the Gospel welling up in your own heart. Note, as you read, the pictures which have inspired the painters' guild to name Luke as their patron. Mark, too, the significant indefinite expressions "a certain man," "a certain poor widow," "a certain city," calling for the use of the word "cer-

XUM

tain," a little Greek word, *tis*, some thirty times without definition of places and persons, characterizing Luke as the universal gospel, for all men, in all places, in every age.

Numerous other interesting studies suggest themselves, but let me urge upon my humanitarian brothers one that is particularly important: As you read the Gospel, mark every reference to woman. If you study your text carefully, you will discover here the emancipation of womanhood to higher and nobler relations,—woman's Magna Charta penned over nineteen hundred years ago by one inspired by God's Holy Spirit. The highest exemplar of human consecration in all the Scriptures is the Virgin Mary. At the annunciation she reveals her perfect faith as she yields her body a sacrifice to God that it may become the sanctuary of the promised Messiah; Mary receives Gabriel's heaven-born message, "with God nothing shall be impossible;" it is she who enunciates the fundamental rule of the Christian life, "Whatsoever he saith unto you do it." Again our Lord reveals two of the lowliest women as vessels of his infinite grace (St. Luke 7, and St. John 4); the first clear announcement of his Messianic office was made to the woman last cited; woman's foresight often provided for needs when men forgot (St. Luke 8), and on the occasion of the feeding of the five thousand our Lord undoubtedly used for his purpose the loaves and fishes provided by a woman's thoughtfulness. An unobtrusive woman teaches us the lesson of true giving, that the measure of the gift lies not in the sum as man sees it; a woman's example reveals that the first step in the true life is to sit at the feet of Wisdom and learn, and then to undertake to do; it was a woman who first received the news of the resurrection—Christ's victory over death,—and conveyed it to the doubting disciples. In Luke, woman was everywhere alert and helpful; man in the background was often bungling and hindering.

My heart's desire and my prayer is that all my fellow craftsmen, ministrants to the needs of the disordered body, may become zealous Lukans, followers of him who in the first century took the crown from Aesculapius and laid it upon another Head and brought us our highest honor. Shall we not also as ministrants to the body accept our priestly office of intercession and ministry to the distraught spirit which, though it is the high calling of all believers, yet lays its peculiar claim upon him who enters the sick room when the body is racked by life's rough blasts and when the spirit strives to quit its mortal tenement?

True moral leadership, then, is best assured to the doctor who recognizes the claims of spirit as well as body and prepares himself accordingly.

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SPINAL ANESTHESIA AND ITS FUTURE IN MAJOR SURGERY.*

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General Statement and Principles

The progress of medicine and surgery has encountered judgments which were based upon prejudice, lack of knowledge and lack of experience. Many of the men in these fields of the past were at times ridiculed, humiliated and discouraged for the want of an open mind on the part of the members of their profession and proper encouragement in the work they were striving to do. Today this is true when men in these fields depart from the ordinary ways of doing things; they are attacked personally without regard for principles and truth. The men who have brought to the human family the drugs which have been and are being used to eliminate pain in an effort to remove pathological conditions and disease have met with professional and public discouragement. This fact has produced a certain type of fear which is not wholesome for proper growth and development of persons endeavoring to bring into existence new and better methods of doing things. Chloroform and ether anesthesia met with opposition. The other forms of anesthesia which have been developed have met with more or less opposition and discouragement, but time has vindicated the value of these forms of anesthetic and so they remain with us. The history of spinal anesthesia is probably the most dramatic development in the field of anesthesia. In the early beginnings it was rather crude in technic and, because of this, there were many failures and deaths attributed to the method. The discouragements and failures did not destroy the courage of the men who were seeking something better, and so today we can say with a degree of certainty that spinal anesthesia is with us to remain until we find something that is better.

*Read before the South Piedmont Medical Society in South Boston, Va., November 26, 1929.

XUM

May I suggest two principles which, if applied to the mind and work of the medical profession of the present day, would produce a condition which would make it possible for progress to be much greater in the next ten years than it has been in the last hundred years? (1) That we withhold passing judgment on a method of work in our field until we have acquired a knowledge which would justify passing a judgment; and (2) that added to this knowledge will be an experience that is shrouded with scientific facts, results, both good and bad. In all the fields of history great men have been discounted by the men and women of their generation because of the fact that they did not have these two things; then, after these men had passed off the stage of action and the story had been written, the human family discovered that it had wronged many of its greatest benefactors.

History

The history of spinal anesthesia dates back to 1885; that is the time when it was born, apparently, a premature infant, and it took a long time for it to receive such nutrition as to cause it to be strong enough to get a hold in this field. I have reviewed sixty articles in my own library and to my amazement I find that forty-three of these articles have been written in the years 1927, 1928, and 1929. These articles deal with the experience that a certain limited number of the profession have had with the various methods used to produce spinal anesthesia. I gathered from these reports of knowledge and experience abundance of evidence to encourage our present effort in this field. For example, in a recent article written by Romberger, he says:

"General anesthetists throughout the country, if they wish to keep abreast of the times, surely must qualify themselves to administer spinal anesthesia. The method is here to stay. It is reasonable and rational; it is accurate and scientific; it is controllable and safe."

In all parts of the United States, in both small and large cities, we are finding general surgeons, gynecologists, and obstetricians working in this field; they are reporting the results. To date these results are most encouraging. Our present methods of keeping records make it impossible to gather accurate figures and facts of the results of the use of the various forms of anesthesia. In reviewing the records for 1925 and 1927 in the registration area of the United States, we find that there was a total of 677 deaths from the various forms of anesthesia; ether led in this total with—male 180; female 196. The other various forms of anesthesia were responsible for the remainder of deaths. In 1926 there was a total of 654 deaths; again ether led. We have no method of determining how many of these deaths during these two years were due to spinal anesthesia. We believe that within the next four or five years these facts will be known to us and then we will be in a better position to compare the deaths from all the forms of anesthesia used.

We believe we can say truthfully that there is no form of anesthesia at the present time that is wholly satisfactory and absolutely safe. There is a certain amount of hazard in every form of anesthesia used at the present time, and the patient who, apparently, with the knowledge we have of him, is a perfect specimen for one or many of the various forms of anesthesia may, after passing through the experience of an anesthetic, develop conditions which terminate in death; hence, I am not advocating routinely spinal anesthesia, but I believe it has merit and should, therefore, be studied with an open mind, and with the knowledge and experience which we get, come to conclusions about its use which will be favorable.

The Contra-Indications for Spinal Anesthesia

My present knowledge and experience lead me to say that there are only three conditions which prohibit the use of spinal anesthesia: namely, (1) hypotension—systolic blood pressure below 100; (2) hypernervous patient—one who faints easily and does not have control of his senses; (3) hypertension—where the systolic blood pressure is above 220. My reason for naming this patient is based upon a belief that the drop in blood pressure in hypertension produces an anemia of the brain which is very dangerous and may cause death.

Indications for the Use of Spinal Anesthesia

Indications for the use of spinal anesthesia in persons who have surgical conditions below the diaphragm, whose blood pressure is between 220 and 100, who are not too nervous, and who have conditions that are specially in favor of the use of spinal anesthesia are these:

the diabetic, the nephritic, the cardiac, the tubercular, the asthmatic, patients with bronchitis or severe colds who develop surgical conditions below the diaphragm, as well as old men and women who develop surgical conditions below the diaphragm. Practically all persons who may have perfect kidneys, perfect heart, perfect lungs, perfect nervous system, are patients that may have spinal anesthesia used upon them for any surgical operation below the diaphragm.

Technic

The technic I have used has been fashioned somewhat after that practiced by Labat and Pitkin. Patient is given from 1/6 to ¼ gr. morphin sulphate with atropine from forty-five minutes to an hour before operation. For over two years I used the novocain crystals made by H. A. Metz Laboratories. I had my patient sit up, and withdrew, usually, three or four c.c. of spinal fluid, dissolved the novocain crystals, and put it back in the spinal canal. About two years ago I began to use spinocain, which is made by the same people. I have had my patient sit up in the same manner as formerly. Pitkin recommends that the patient be in a reclining position and that the head of the patient be lowered in accord with the location of the operation. In the use of both methods I have had my patient lie down immediately, and had the head of the patient lowered and the feet elevated in accord with the location of the operation. I have used the novocain crystals and the spinocain on approximately three hundred patients up to date. The anesthesia has been incomplete in about 6 per cent of the cases, that it so say, it was necessary to administer gas and oxygen or ether to produce anesthesia complete enough so that I could continue the operation.

The following types of operations have been performed in patients from thirteen to eighty-one years of age, by the use of spinal anesthesia: Amputation of lower extremities; hemorrhoidectomies, hysterectomies, pelvic infections, appendectomies, herniotomies, prostatectomies, Cesarean sections, intestinal obstructions, colostomies, empyema of the gall-bladder, gall-stones, removal of the gall-bladder, deliveries by birth canal, resection of the intestines, prolapsed uteri, strangulated hernia, perineorrhaphies, trachelorrhaphies, and perinephritic abscess.

In all of these operations, with one exception, I have had no complications and no mortalities. The exception occurred the night of November 24, 1929, while I was in the midst of working on my present paper. I confess to you that this experience has caused me to study more about spinal anesthesia than all my experiences of successful cases. The case is as follows:

A negro girl, twenty-one years of age, full-time pregnancy, had been in labor thirty-six hours, was Cesarean sectioned this December two years ago by Dr. Winslow, with an uneventful recovery, and both she and her baby left the hospital all right. Examination of the patient showed a long abdominal scar, with a uterus that was contracting regularly and right severely. Patient had an extremely small pelvis and was very short between the pelvis and the diaphragm, with a baby that was unquestionably too large to pass safely through the birth canal. Patient was removed to Providence Hospital. I called Dr. Winslow to help me with the case. After checking her over, I felt sure she was a good specimen for spinal anesthesia. At 10:10 P. M. I had the patient sit up and I gave her spinocain. On account of her small size I gave her only two-thirds of a dose. Very shortly after the administration of the spinocain, I discovered a marked change in the patient's condition. From the time that she was given the spinocain until I was ready to begin work was about five minutes. The nurse who was watching the patient remarked, "Doctor, the patient is not breathing." Probably another minute passed, and it was discovered that she was not only not breathing but that her heart was not beating. Quickly I opened the uterus and delivered a female baby of about eight pounds. Dr. Winslow went to work on the patient to get her to breathe. She was given adrenalin, atropine, saline in the vein, oxygen, and artificial respiration. While Dr. Winslow and others were working, I quickly closed the uterus and closed the abdomen. The whole time took about ten minutes for the Cesarean. The best description I can give of the patient is this: Her facial expression was that of a person who was frightened to the degree that she was unable to move or speak, and, in such a situation the patient simply quit breathing and the heart action ceased. This is my only fatal case. I report it with the hope of getting some good out of reporting it, and also to stimulate more

XUM

accurate study on our part in selecting cases for spinal anesthesia.

Advantages of Spinal Anesthesia

The advantages of spinal anesthesia are these: (1) You put into the body the smallest possible quantity of foreign substance, and this foreign substance does not, so far as we are able to tell at the present time, interfere with the physiological processes of the various organs of the body; (2) it gives you complete relaxation and the field of operation is as nearly perfect as it is possible to be. The surgeon being aware of the fact that his patient is conscious and is able to talk to him makes him develop a technic which a general anesthesia will probably not do. The advantage to the patient during the operation is that the surgeon can discuss with him just what is being found, and can have the patient's ready consent then and there as to what should be done and as to what should not be done. The peristaltic movements of the intestine are increased. The convalescence from an operation with spinal anesthesia is very much smoother than from a general anesthetic; rarely ever do we have nausea and vomiting; complications are not nearly so common with spinal as with general anesthesia. In case of ruptured appendix with abscess, spinal anesthesia offers a greater opportunity for recovery of the patient than probably any form of anesthesia at the present time. Since I have used spinal anesthesia I have not lost a single case of ruptured appendix with abscess or gangrenous appendix; whereas. before I began to use spinal anesthesia I lost three cases which were not nearly as bad as some cases I have operated on with the use of spinal anesthesia. Personally I believe that if those three cases could have been operated on with the use of spinal anesthesia they would probably be living today.

In the administration of spinal anesthesia there is a drop of systolic blood pressure. This can be controlled by the use of ephedrin.

The Future of Spinal Anesthesia in Major Surgery

The future of spinal anesthesia in major surgery is sure and certain. I believe that within less than five years a large percentage of major surgery from the neck down will be done by the use of spinal anesthesia. Spinal anesthesia offers to the patient better opportunity for smooth convalescence from any operation below the diaphragm, and it brings to the minimum the possibility of complications; likewise, it offers to the surgeon the opportunity to develop the finest technic possible. When a surgeon is operating on a patient who is awake, he is much more careful in the handling of the various organs than if the patient were asleep.

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Masonic Temple.

STREPTOCOCCUS HEMOLYTICUS SEPTICEMIA CURED APPARENTLY BY INTRAVENOUS GENTIAN VIOLET THERAPY.*

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Following a period of great enthusiasm over the prospects of the value of intravenous dye therapy, the pendulum has apparently swung over in a relatively short time to a correspondingly great skepticism. Younger physicians are apt to relegate such therapeutic measures for the treatment of septicemia to the category of discarded methods. Even such a voluminous treatise of medicine as that edited by Tice fails to mention intravenous medication in septicemia. Nevertheless, a few patients have apparently been cured by this type of therapy. One should, therefore, always consider dye therapy in handling such a serious and often fatal condition as septicemia, at least in those cases in which other methods have failed. The following case il-

*From the Georgetown University School of Medicine.

lustrates the occasional successful application of this ill-reputed method of treatment.

Case Report

On April 5, 1929, the patient, a white girl, aged ten years, developed a pain in the right ear, which persisted all night. The attending physician discovered a swelling in the region of the parotid gland, and, because two brothers of the patient were recovering from mumps, concluded the girl had also contracted it. The pain in the ear continued with a little fever and on the third day a yellow seropurulent discharge from the ear appeared. The swelling in the parotid region disappeared by the fifth day. Evidence of mastoiditis developing, the patient was sent to the hospital on the sixth day, and the following day a complete simple mastoidectomy was performed for acute hemorrhagic mastoiditis. A culture of the pus revealed hemolytic streptococci. The day after the operation the temperature rose to 102.4° F., but gradually dropped to normal by the eighth day after operation. That evening and the next it was slightly elevated. On the tenth day after operation the temperature suddenly jumped by noon to 104.2° F., and by midnight it was 104.8° F. Examination of the mastoidectomy wound revealed edema and erythema of the soft tissues. The leucocyte count was 11,600 per cu. mm., with 84 per cent polymorphonuclear neutrophiles. A blood culture revealed hemolytic streptococci. On April 21, the second day after the flare-up, the temperature rose to 105.6° F., and an injection of erysipelas streptococcus antitoxin was given. On April 22, the temperature remaining above 105° F., the patient was sent back to the operating room, where the right lateral sinus was uncovered. Dark blood flowed freely from a small puncture wound of the sinus. A piece of idoform gauze was left in the mastoid wound, which was closed with silk-worm-gut sutures. The temperature, however, continued to range between 104° and 105° F. On April 24, intravenous therapy with gentian violet was considered but not undertaken. On April 25, blood transfusions of about 350 c.c. each were instituted and given every few days. On this day the hemoglobin was 65 per cent by the Dare method, the erythrocytes numbered 3,400,000 to the cu. mm. of blood, and the leucocytes numbered 12,700 per cu. mm., of which 84 per cent were polymorphonuclear neutrophiles. The patient was drowsy and languid, but nourishment, although difficult to administer, was maintained. The temperature became more fluctuating, dropping to normal in the morning but rising to 102° to 104° F. in the evening, sometimes after a chill. Cultures of the blood continued to show hemolytic streptococci in massive amounts. On May 2, jugular pressure with a spinal puncture needle in place revealed complete obstruction of the right jugular vein. Examination of the spinal fluid, which was under slightly increased pressure, revealed a slightly turbid fluid containing 580 leucocytes per cu. mm., of which 72 per cent were polymorphonuclear leucocytes and 28 per cent lymphocytes. The globulin was increased three plus in amount. Culture of the fluid was negative after five days. There were no clinical symptoms of meningitis. On May 3, the right internal jugular vein, which was collapsed, was ligated in the middle of the neck. Following this procedure, the febrile course continued as before. Nutrition was preserved by insistence on feeding and the child's general condition seemed good, so much so that she was taken daily on a stretcher out into the sun. By May 16, however, the febrile course had not altered, and intravenous dye therapy was reconsidered. On the afternoon of that day the patient had a chill and the temperature was 103° F. The next morning, May 17, while the temperature was subnormal, as it usually was at that time, 30 c.c. of a one-half per cent solution of gentian violet was administered intravenously. Thereafter the temperature remained normal or subnormal. The patient immediately began to eat voluntarily. Strength quickly returned and on the eighth day after the dye was injected the child left the hospital in a wheel chair. A blood culture taken on this day was sterile. One week later the child walked into the hospital to appear at a conference of staff physicians. During the course of the illness eight blood transfusions and the one injection of gentian violet were given at about the same point in one vein and blood was drawn from this vein several times for blood cultures.

Comment

One can always say, of course, after a story such as this, that the institution of dye therapy was coincidental with spontaneous recovery. If this is true in this instance, the coincidence is unusually surprising. In my enthusiasm I am inclined to believe that the use of gentian

violet had a great deal to do with the recovery of this patient. Exactly how the dye worked is another question. It seems unlikely that 30 c.c. of a one-half per cent solution of gentian violet distributed throughout several quarts of blood could suddenly destroy the myriads of streptococci floating therein. Possibly in this case the patient's immunity had reached such a point that but slight assistance was necessary to carry the battle. The importance of preserving the patient's nutrition and resisting powers by frequent transfusions and diet cannot be too strongly stressed.

Georgetown University Hospital.

TREATMENT OF GENERAL PARALYSIS BY INOCULATION WITH MALARIA.*

By G. W. BROWN, M. D.,
and
EDWIN R. MICKLE, M. D.,
Williamsburg, Va.

Historical

The treatment of general paralysis of the insane has followed two main channels; the one, which may be termed specific therapy, is of recent date and was instituted with the discovery of the true nature of the condition, while the other, the non-specific therapy, dates back for many years. Until recently all attempts at specific therapy have been useless, no matter what method of attack. Salvarsan, or any of its modifications, or salvarsanized serum have been introduced into the blood stream, beneath the skin, intra-spinally and intra-ventricularly, but all have proven as ineffective as the earlier use of mercury. Ten years ago tryparsamide, a new arsenical, was introduced, and because of the beneficial results following its use in human trypanosomiasis, much was expected of it in the treatment of paresis. Experience has shown that it is beneficial in selected cases, but it leaves much to be desired. Quite often it attacks the optic nerve with disastrous results.

We are, however, concerned chiefly with the non-specific treatment. This dates from earliest times. Hippocrates, Galen, Sydenham and others proposed the use of various infectious diseases such as typhus, typhoid fever and erysipelas to influence the course of various psychoses. Many observers in the nineteenth century have reported the beneficial results noted in mental conditions following febrile reactions from various causes. These procedures naturally fall into three main groups:

1. Substances derived from micro-organisms, such as tuberculin, staphylococcus vaccines, etc.
2. Substances such as milk, peptones, etc.
3. Living organisms.

Bercovitz has made an interesting observation on the prevalence of malaria and the scarcity of neurosyphilis in the inhabitants of Hainan, China. Of a population of 3,000,000, 50 to 60 per cent of whom have syphilis, no case of paresis, and only two or three of tabes dorsalis have been seen during his eight years of residence. The tertian and estivo-autumnal types predominate. Although he advanced several theories to account for this, he concludes that the presence of malaria may serve to prevent the spirochete from invading the tissues of the central nerve system.

The present method of treating paresis by inoculating patients with the living organism was proposed by Wagner von Jauregg in 1887, but because of the indifference with which the suggestion was received, it was abandoned and nothing was heard of it until 1917, when it was again revived by him in the Vienna School. It met with more favor this time and the literature has, for the past decade, rapidly increased in volume. The results reported have been varied. Some observers are not enthusiastic, while some report more favorable results. Those of recent years have been somewhat guarded.

Literature

Bunker and Kirby report definitely favorable response in 50 per cent of 156 male patients treated with malarial therapy. The death rate was 12.5 per cent in this group observed over an *average* period of two and one-half years. Based on the average expectation of life the rate should have been 65 per cent.

McIntyre and McIntyre, in the treatment of forty-two cases, report complete remissions in 20 per cent; almost complete remissions in 12½ per cent; improvement in 20 per cent; unimprovement in 17½ per cent, and deaths in 30 per cent.

Lewis, Hubbard and Dyer followed up 1,558 cases of paresis: 77 per cent died in the hospital; 5½ per cent of these lived more than

*From the Records of Eastern State Hospital, Williamsburg, Va.

five years; while 85 per cent died in less than three years.

Bahr and Bruetsch reported 100 cases: 25 per cent were able to leave the hospital; 12 per cent improved to such an extent that they could be trusted in useful occupations in the hospital; 40 per cent were placed in the unimproved group. In thirty-two cases of the latter group the disease was progressing; in eight instances the disease remained stationary. Five succumbed during the rigors, and eighteen died following the malaria.

Contraindications

Diabetes, tuberculosis, pronounced general debility, or severe organic lesions of the heart were considered contraindications to injections of malaria. In patients of advanced years small doses of digitalis were given following the injection. Although a large percentage of paretics have an aortitis, this is rarely the cause of death and was not considered a contraindication.

Diagnosis

The stage of the disease in those admitted to this hospital was almost without exception far advanced. They had committed some gross indiscretion and shown pronounced mental changes before commitment. Of course, a good many did not have what is commonly known as a classical symptom, that of delusions of grandeur, but all gave a history of psychic abnormalities, which had been present for months or years. They not infrequently simulated other forms of mental disease, especially those characterized by excitement or depression. Argyle-Robertson pupils, tremors of the face, tongue or lips, speech defect and ironed-out expressions were almost universal. Transient hemiplegias were common.

The results of laboratory examinations have been of great benefit in arriving at a diagnosis. If the blood and spinal fluid Wassermann are strongly positive; if the fluid is under pressure, and the cell count is as high as 20 to 40 to the cm. and of the lymphocytic type, with an increase in the globulin, we do not believe any error is probable in making a diagnosis if the history, physical and mental findings are correlated. The colloidal gold curve is undoubtedly of great benefit, but, in as much as multiple sclerosis may produce a typical paretic curve, we believe that it is very easy to over-estimate its importance.

Method of Administration

Tertian malaria is undoubtedly the safest and best type to use. We were fortunate in securing a specimen from the laboratory of Dr. Geo. H. Kirby, Manhattan State Hospital, New York. Subcutaneous injections of 2 c.c. of the citrated blood was used at first, but after the strain had become firmly established, we used the simple arm to arm venous injection of 1 c.c. of pure blood. No untoward results were noted in this method. The chances of a "take" are better and the period of incubation is shorter than that following subcutaneous inoculation.

After a period of from three to ten days, the malarial attacks usually commenced. The temperature reached 103° to 105° and the paroxysms occurred every other day. This was interpreted as being a double tertian infection, as several patients received more than one injection. The fever may begin as a tertian and become quotidian in type. This does not depend on the strain of parasite used, but upon the reaction of the individual.

Our experience has shown us that it is better to allow the patient to have as many as a dozen chills if the physical condition will tolerate it. Unusually high temperatures, or those which cause much discomfort, can be controlled by cold sponges. Quinine in small doses does not moderate the pyrexia. It either has no effect or stops the paroxysms altogether.

When it was decided to terminate the treatment, 10 grains of quinine sulphate orally three times a day for three days, followed by 10 grains daily for three weeks, always sufficed.

Results

During the past four and one-half years, at the Eastern State Hospital, we have treated forty patients—thirty-one male and nine female. Thirteen of this number were under forty years of age, while twenty-seven were over forty. The youngest patient was twenty-six; the oldest sixty-two.

In discussing the outcome of malaria treatment, two questions naturally present themselves—first, the clinical results obtained, and, second, the dangers of the procedure. The

following is the tabulated results of our experience:

Full remissions	5 or 12.5%
Unimproved	17 or 42.5%
No arrest of pathological process	3 or 7.5%
Died in less than one month after administration of M.	3 or 7.5%
Died from 3 months to 2 years following inoculation	7 or 17.5%
Lived more than 2 years	5 or 12.5%

The five who had a full remission were able to leave the institution, follow their usual vocations and become self-supporting. There is, of course, no way of knowing how permanent this result will be, because a period of at least ten years should elapse before we can speak of a cure, or can be certain that this is not anything more than a remission, which might occur spontaneously. Seventeen were considered unimproved in that they still require institutional care. There were three in whom no appreciable check in pathological process was noted, and these have rapidly become more deteriorated.

From an economic aspect, only those patients are considered improved who are able to leave the hospital and become useful outside. From an humanitarian standpoint, any change which results in improvement—physically, mentally or morally—is of value. We have considered only the former, the economic side, in presenting this series. This may account for the large number of those unimproved.

Many of this group improved markedly in their general appearance. Patients, who were previously dirty and untidy in habits and speech, often become cleanly and neat and careful in conversation. The complexion and texture of the skin improves, and there is often a marked willingness to work in those who have previously refused to help around the hospital.

Seizures are less frequent after a course of chills, and often patients regain control of their sphincters. Tremors are less, but there are no marked changes in the reflexes.

Mentally, the treated patients often experience a feeling of good health. This is more normal in character and is not euphoric or boastful. Grandiose ideas have a tendency to disappear, and the attacks of excitement or depression become less frequent and may also disappear.

The changes enumerated above do not, of course, occur in each case, but most of the so-called unimproved group showed some of these.

Dangers and Difficulties

We now come to the second question, namely, the danger and drawbacks of the procedure. Three patients died during the malaria paroxysms. The mechanism of death from malaria is not always plain. Emboli, massing of parasites in the brain capillaries, or heart affections, including myocarditis. coronary blockage, etc., may be the causative factors.

Twelve patients died from three months to two years following the cessation of chills. Some patients possess an immunity to malaria, either partial or complete. It was necessary to re-inoculate several of our patients, and these often had from four to six chills, and apparently sterilized themselves. One patient was inoculated eight times over a period of three years and did not acquire an infection.

The difficulty usually experienced by some practitioners in keeping the organism virile for the inoculation of isolated cases was apparent here. It cannot be maintained in an active state on artificial media for transmission to new patients as they are admitted. It is necessary to carry the blood from donor directly to the recipient.

Comment

1. Before the recognition of paresis as a syphilitic disease, the prognosis of recovery, or for any improvement, was hopeless.

2. The advent of specific treatment failed to improve the gloomy outlook.

3. In as much as paresis is a chronic inflammation of the brain and its coverings, a chronic meningo-encephalitis, we cannot hope for a cure. An arrest of the pathological process is all that can be expected. It behooves us, therefore, to make an early diagnosis and institute treatment at once, before there is much destruction of brain tissue.

4. The mortality rate encountered indicates that the malaria treatment of general paresis is attended with definite risk to the patient. When one reviews the fatalities that have occurred in other forms of treatment, one is forced to the conclusion that no present method of therapy is without grave dangers. In a condition whose prognosis is so univer-

XUM

sally hopeless, it would seem, however, that the possibilities of relief out-weigh the possible chance that an already blighted life may be shortened.

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CANCER.

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"I propose formless and undetermined fancies, like those who publish subtle questions to be after disputed upon in the schools, not to establish truth, but to seek it."—MONTAIGNE, LVI.

The human animal begins existence as a fertilized ovum. The ovum is a single animal cell. As soon as it is fertilized, it immediately begins to multiply itself with great profusion, producing a multitude of cells similar to itself, arranged in a layer within the embryonic sac. In the early period of embryonic life, this collection of cells is called the blastoderm. The early cells of the animal embryo are of the most primitive form, much like amoebae. At first they are all apparently alike. As growth proceeds within the maternal womb, the layer of the blastoderm is divided into three other layers, the epiblast, the mesoblast and the ectoblast. These now take on different characters, and, by the time the infant is ready to be born into the outside world, have become fairly well differentiated into the adult types that make up the cells of the human body,—that is, they have evolved from a single primitive type of animal cell into a number of types, and have acquired special functions for the different groups, as, for example, bone, muscle, gland, skin, nerve. The tendency to exuberant reproduction seen in the embryonic stage has now disappeared. The differentiated cells have become permanent members of the body structure, and only such reproduction goes on as is necessary to repair the wear and tear of life. In some tissues, such as the skin, this process is quite active. In others, such as bone, it is almost negligible, after maturity is attained.

If, however, a destructive agent attacks any of these tissue groups, nature responds with the phenomena of the inflammation, regeneration and repair. We now find that the tissue cells of the locality injured begin to multiply, reverting to the type of cell found in the embryo. When the local crisis is past, this type of reproduction ceases, and the new cells develop into the adult type. We see, then, that when cell existence is endangered, it is a biological law that the instinct for survival causes the cells to turn back to the embryonic state. This principle persists only so long as the destructive agent is active. When the danger is past, the adult phase is resumed.

Just what is the nature of the stimulus set in action by injury is not known. It is known that its effect is to cause temporary reversion to the embryonic state. Why it ceases, after once having been set in motion, is not known. It seems fair to assume that the causative stimuli cease when the injurious factor ceases to be active. The phenomena, then, of regeneration and repair of a local tissue injury are a reversion of the evolutionary process by which the animal develops from the fertilized ovum into the adult type.

It is not necessary for us to be able to understand the life principle which determines the evolutionary process, in order to be able to conceive of an inversion of the process,—that is, a retrogression from the adult type to the embryonic type. This is precisely what happens in cancer. The difference between

cancer and the normal regeneration and repair described in connection with the healing of local injury lies in the fact that in cancer there is no time limit to the reversional tendency. The embryonic cells do not cease to multiply as such, and develop into adult cells, but continue to behave as they do in the early stage of embryonic existence. The new tissue now becomes parasitic, living at the expense of the adult organism, invading it and destroying it. It would seem that the difference between the two processes lies in a difference between the stimuli that set them in motion; that in the one case the activity of the stimuli ceases with the activity of the injury, while in the other they are generated continuously and permanently.

The common known causes of local injury are trauma, parasites, and physical or chemical irritants. These have all a time limit. In cancer we have to assume a stimulus, or a group of stimuli that act continuously, and, furthermore, that these stimuli are localized, and not generally distributed through the body.

We recognize that a low grade of irritation, continuing over a long time, is not infrequently followed by the development of cancer at the site of irritation. This is seen in the epithelioma of the lip of smokers, and in the artificially produced tar cancer of experimental animals. It would seem that if a local irritation, not intense enough to produce cell death, continues indefinitely, the fixed tissue cells at first respond in the same way as they do in the presence of an inflammatory agent, reverting to the embryonic type, expecting to accomplish their duty of repair, and then to resume the adult type. But the local stimulus does not cease to act, as in the case of ordinary injury, but persists continuously and indefinitely. The biologic trend is for the embryonic phase to continue so long as the injurious factor is active. It appears that, after a time, these cells lose the power to return to the adult type, and revert permanently to the embryonic type. They become purely parasitic, as they were during the early stages of intrauterine life. They are acting under the basic law of survival. Unable to carry on as adult cells, they resort to unlimited reproduction, in order to maintain existence at all costs. This principle of reverting to primitive form and intensification of reproductive function is seen throughout life. Rabbits, fish, insects, creatures that form the prey of other animals, provide against extinction by excessive fertility. The fact that in cancer this procedure on the part of a local group of cells is disastrous to the individual in whom they are located is a mere incident. As Galen said, nature acts by general law, and not *à propos*. They are like the individuals of an organized society that has broken down and ceased to protect its members; they revert to a barbaric cave man type.

A complete solution of all the factors concerned in understanding the nature of cancer probably involves many things. There are three questions that seem to present themselves, whose consideration is fundamental. They are:

1. What is the life principle that determines the development of the fertilized ovum into the adult animal?

2. What is the source and nature of the stimuli that, in the presence of local injury, cause the adult fixed tissue cells to revert to the embryonic state, as seen in the ordinary process of regeneration and repair?

3. What is the nature and source of the stimuli in cancer that cause the adult fixed tissue cells to revert permanently to the embryonic type?

The answer to the first is probably unattainable for humanity, since it seems to involve a knowledge of primordial causes and purposes that is beyond the range of our finite vision. The second and third are practical problems of science, whose solution we have a right to expect in the course of time. The real purpose of this paper is to suggest the line of investigation that seems to offer a prospect of finding the answer to these questions.

Pathology, in its early stages, was limited to the study of the gross anatomical changes occurring in disease. Later, the microscope added the study of the finer structures of the invidual cell, and its environment. Then it came to embrace the study of disordered behavior of the body and mind, and we had pathological physiology and pathological psychology.

During the present generation pathological chemistry has entered the field, and in the few years it has been studied, it has added immensely to our understanding of diseased processes. As yet, it is in its infancy. The ul-

XUM

timate analysis of every vital process is physio-chemical. Continued progress in scientific medicine is evidently to be along this line. A few years ago chemistry existed in the medical curriculum only because of the materia medica and toxicology. In the future no question of physiology, normal or pathological, will be completely solved until its physio-chemical nature is revealed. Future endowments for the advancement of medical science should have the view of enlarging the interest of chemists in the phenomena of animal life.

Who, in the last century, made the greatest contribution to the advancement of medical science? Pasteur, the chemist.

2010 *R Street, Northwest.*

MEDICO-DENTAL DIAGNOSIS.*

By HORACE M. DAVIS, D. D. S., F. A. C. D., Baltimore, Md.

Many times in the past it has been my pleasure to talk to dental groups and on numerous occasion to talk to medical groups, but this is the first time I have had an opportunity to talk to both at the same time. This is a privilege much appreciated, I assure you.

Experience gained during many years while working extensively with dental and medical men has given me some definite impressions of the shortcomings of both groups especially as they apply to their collaboration in treatment of systemic diseases. If you think these impressions are wrong, say so and why. If you agree with them, so much the better. In either case I believe good will come from frank discussion of them at this time. Please bear in mind that nothing said shall be in any sense personal, nor that we are unmindful of the fact that there are many individual exceptions to the rule.

Let us go back at least ten years when the idea was conceived that teeth cause practically all of the ills of humanity. "When in doubt remove teeth," became the slogan. Wild promises, without scientific or clinical foundations were made as to the effect or cures if teeth were removed. Like the recent stock market break the result was inevitable and responsible for the loss of much of the good and substantial that we had. Patients in many instances were not improved, but at times became worse afflicted. The net result was a period of resentment on the part of the public. Physicians lost their enthusiasm and went from one extreme to the other, apparently coming to the conclusion that teeth are not important factors in systemic diseases. At present, in most cases it appears that when nothing else can be found that might be causing a patient to be ill, teeth are then given consideration. Gentlemen, too often teeth are removed when all other treatment has failed. This is deplorable, for at this late period the patient usually shows no improvement even though infected teeth may have been the primary cause of an illness. The consideration of teeth as a factor in systemic diseases should be routine and not a last forlorn hope.

Let us again review that ten-year period from the dental standpoint. Until then little consideration had been given to teeth as they are related to systemic infection and the dentist was skeptical of the suddenly conceived wide sweeping medical theories, so confidently advanced though upon unproved foundations. He was resentful when his patients, to whom he had given conscientious service for years, were arbitrarily ordered by medical men to have their teeth removed upon the supposition that they might be foci of infection. By precept and experience he had learned to regard the teeth as very important organs in promoting human health and happiness and he looked with awe upon their ruthless destruction without more definite evidence of their responsibility in causing some remote systemic disease. Having been specially trained in their care and treatment, he considered himself more competent to pass upon their retention or extraction and naturally resented it when the physician usurped his prerogative. The result was confusion which did not react to the benefit of the patient.

Two impressions must be submitted here, neither of which in my opinion will be pleasing. First, that the medical man who is conscientiously endeavoring to thoroughly treat his patients has a right and should select some competent dentist to advise him about mouth conditions. If all dentists were equally competent in all branches of dentistry this would not be necessary. However, we know they are not and we should be broad-minded enough to admit the physician's right to a dental opinion in which he has confidence. To

*Read at a joint meeting of the Richmond Academy of Medicine and the Richmond Dental Society, November 26, 1929.

make exceptions break down the rule. The other impression is that physicians should refrain from giving dental opinions to patients and particularly cease arbitrarily demanding the removal of teeth when the dental opinion is that they should not be removed, and that general surgeons should not operate on mouth cases without dental consultation and cooperation.

Only by this procedure or some similar one can we establish that confidence in each other that we should have. Unquestionably, the outstanding reason for the physician's attitude is his lack of confidence in the dentist's medical knowledge. Unfortunately the dentist is in most instances judged only on his knowledge of things medical. That is not quite fair because most of his training and practice have been along other lines. His training and clinical observation give him knowledge of the relation between general health and mouth conditions, but they cannot be expected to provide him with a thorough understanding of the practice of general medicine which a physician must have. On the other hand the average physician's knowledge of teeth is just as limited as is the average dentist's knowledge of medicine.

In Bulletin No. 19 of "The Carnegie Foundation for the Advancement of Teaching" we find the following in General Comment on a leading Medical School, quoting from their Annual Announcement.

"It is our desire to train every student in the use of the laryngeal mirror, the otoscope the interpretation of X-ray plates and other methods necessary for the recognition of disease in the accessory nasal sinuses, ears, tonsils, larynx and oesophagus. Each student in the second-year class receives individual instruction in the anatomy of the upper air passages and the use of the various diagnostic instruments. They . . . are required to examine the nasal cavities, throat and vocal cords in each other." In short, students are taught to examine almost everything in this region except the teeth.

In the three-page index in the Annual Announcement of this Medical School, the words tooth, mouth, oral dentistry, odontology and stomatology, do not appear, although ear, eye, nose and throat, or equivalent words, have their accustomed places. This Announcement contains no suggestions of attempts to correlate instruction in clinical dentistry with clinical medicine and there are no indications of elective or graduate courses in any phases of clinical dentistry or stomatology but advanced courses are very numerous for other regions of the body.

The proper consideration of our patients appears to make each profession dependent upon the other. Surely no dentist will deny his need of the physician when dealing with patients suffering with cardiac diseases, nephritis, advanced stages of tuberculosis, hemophiliacs, extreme acute infections and many other diseases.

The physician needs the dentist to assist him in all types of mouth diagnosis and treatment. Many cases of stubborn maxilliary sinus infections are caused by infected teeth and immediately clear up on their removal. Acute and chronic disturbances of the throat are in many instances due to partially erupted third molars. Fractures can be treated better and the mouth kept in a cleaner condition with the dentist in attendance but, after all, his work is that of mouth diagnosis. A set of X-ray films, even when perfect, is only an aid to diagnosis, and they are rarely perfect. If he is conscientious, no effort will be made to diagnose from inadequate films, nor in the absence of the patient. Experience teaches us that only grief comes from careless or indifferent efforts at diagnosis.

This paper was illustrated by lantern slides.

Medical Arts Building.

HOSPITALIZATION OF CONTAGIOUS DISEASES.*

By C. L. OUTLAND, M. D., Richmond, Va.

Those of us who are responsible for the control of communicable diseases have frequently felt the need of a contagious disease hospital, capable of serving the public need for isolation and treatment. We have been inclined to envy communities which have been able to provide excellent institutions of this sort, but have been deterred from establishing them by the cost of construction and maintenance.

While practically every community, from time to time, is embarrassed by the occurrence of contagious diseases, which cannot or should not remain where they are found, most small communities are forced by the lack of hos-

*Read before the Virginia Public Health Association, in Richmond, January 9, 1930.

pital facilities to isolate these cases, in many instances, under unsatisfactory conditions.

This need has been felt in Richmond to such an extent that a few years ago a philanthropist provided funds for the erection of such a hospital. This well designed contagious disease hospital was operated for a short time as such, but finally had to be abandoned and was used for other purposes; and at the present time is being used as a children's hospital. After its conversion to other uses, there was still a need; so we constructed a less elaborate and less extensive hospital unit which seemed capable of serving a useful purpose.

Institutions of this type is the main topic for this discussion, along with the need for hospitalization and some of the problems met with in the isolation of various cases.

The need for hospital care, from an isolation standpoint: We have such instances as illness in the homes where there is a dairyman; where there is a restaurant or food handler; school teacher; preacher; large number of children in the home; necessity of keeping High School students out where a younger child has a contagion; large boarding houses; poverty of patient or parents; Y. M. C. A.; Y. W. C. A.; railroads; steamship lines; apartment houses; hospitals, especially surgical and obstetrical; contagious diseases complicating other diseases; dairy farms supplying a town or city; diphtheria carriers—patients who are not usually ill and therefore difficult to keep quarantined.

The above, then, are some of the conditions where proper isolation is very important. There arises, then, the question of how best to meet these problems. I venture the assertion that the ideal way is by an adequate contagious disease hospital, well staffed and supervised, this, of course, to take care of all cases of contagious disease of whatever nature. With our present rules and regulations for the quarantine and isolation of contagious disease throughout Virginia, it has been rather hard to get enough patients to make such a hospital successful. Many parents are unwilling for their children to go because of a fear of contracting other diseases admitted to the same hospital. They also feel that most contagious diseases are not serious enough to need hospitalization, and are willing to any inconvenience which may be attached to home quarantine.

With the outstanding need for a hospital to take care of such cases mentioned above, we planned and constructed a small hospital on the City Home property, at a total cost of $12,000; with ten private rooms, one four-bed ward and one six-bed ward; four tile baths and a diet kitchen. In each of the private rooms there is enough space for two beds, while the wards can take care of one or two extra beds without being unduly crowded. The hospital is under the direction of the City Home staff, with one nurse who gives her entire time to it. Extra nursing service is always provided for the ill patients, especially for scarlet fever in acute stages, laryngeal diphtheria, intubated cases of diphtheria, spinal meningitis, and complicated measles. A conservative estimate of the cost per patient per day is from $2.00 to $2.50.

Since the organization of the hospital, contagious diseases taken care of at the Home have increased, as shown by the following figures, since 1923:

In 1923 there were 161 cases.
In 1924 there were 207 cases.
In 1925 there were 248 cases.
In 1926 there were 262 cases. (Hospital opened October 18, 1926.)
In 1927 there were 410 cases. (Increase of 138 over previous year.)
In 1928 there were 412 cases.
In 1929 there were 690 cases.

These include tuberculosis and venereal disease, which are taken care of in special wards and not in the contagious disease hospital.

"Since the opening of the hospital, it has been in constant use, housing such cases as measles, scarlet fever, chicken-pox, scabies, pink eye, diphtheria, meningitis, etc. In instances where surgical operations were necessary, arrangements were made for same to be performed in the building. The building has already proved a real asset to the service of the City Home."

The above is quoted from the Superintendent's Report for 1926.

During this time we have had as high as sixteen patients at one time. There are occasionally a few days when no patients with diseases of a contagious nature are in the hospital. We have found that the greatest need

is during the months from August to March, with the seasonal variation for the type of case (the fall and winter months scarlet fever and diphtheria, spring measles, and summer whooping cough).

Thus far, in nearly four years of operation, we have not had a single cross infection, and have had at the same time measles, diphtheria, whooping cough and scarlet fever. In the matter of deaths, we also make a very good showing, considering most of the cases taken who have died have been severely ill at time of admission.

Below are listed some of the types of cases where isolation at hospital has been especially beneficial:

Case No. 1. Young woman from Y. W. C. A. rooming house, where there were three or four beds in each room; twenty to twenty-five girls on each floor of the building.

Case No. 2. Student at one of our colleges; no proper ararngements for isolation.

Case No. 3. Chinese laundry—three children with diphtheria at the same time. To properly isolate, laundry had to be closed; by moving them to hospital, mother and father were able to continue their work.

Case No. 4. Three children in one family victims of scarlet fever. Mother unable to take care of them at home; father at work in a distant city. By the aid of hospital, mother was able to look after children in one of the wards. One of these had an ear complication which was immediately recognized and treated by the interne.

Case No. 5. Merchant—groceryman—who lived in home with several children; isolation difficult. Hospital helped him to solve the problem.

Case No. 6. Mother and two children ill with diphtheria. No one at home to look after them. Third child isolated in another room at hospital did not contract the disease.

Case No. 7. Diphtheria carrier. Several other children out of school while patient remained at home. He was sent to the hospital. Other children were found negative and were allowed to return to school.

Case No. 8. Numerous cases from children's wards of City Hospital, as well as from the City Juvenile Detention Home, the State Board of Public Welfare, and other children's homes in and around the City.

In the brief review of the cases listed above, it is plain to see that there is a definite economic problem connected with the proper isolation of contagious cases.

It seems to me that the results we have obtained in our small hospital are applicable to other cities, towns and counties of our State. As before mentioned, the general public must be educated to the reasons for going to a contagious disease hospital. When this has been fully accomplished and adequate hospitals built and staffed, so that the public will know they are receiving proper care, then our problem of hospitalization of contagious diseases will be met, and we will, I firmly believe, be able to show a reduction in morbidity and mortality.

Proceedings of Societies

Norfolk County Medical Society All-Day Clinic.

In harmony with, but not under direction of the Department of Clinical Education of the Medical Society of Virginia, the Norfolk County Medical Society held an all-day clinic on Monday, March 31st, which was unanimously declared to be one of the most successful and practical medical gatherings in Norfolk for a long time. The Department of Clinical Education aided greatly in the publicity given prior to the event, so that a large number of physicians from the adjoining territory were present.

The program was presented substantially as announced in the April issue of the Virginia Medical Monthly, and two or three features call for comment.

First, those taking active part in the program, with the single exception of Dr. James T. Gwathmey, of New York, who happened to be in Norfolk recuperating from his recent accident, were members of the Norfolk County Medical Society. Second, no attempt was made to discuss the bizarre or extremely rare conditions, the subjects being all related to the every day practice of the average physician. Third, in a program covering so long a time, only two of those assigned to speak failed to appear, and contrary to general experiences the program went through on schedule time.

The morning session was held in the Protestant Hospital and was opened with a Medical

Clinic under direction of Dr. F. C. Rinker who dealt with certain cardiac conditions. Dr. Walter P. Adams reported several cases and was followed by Dr. A. B. Hodges.

Dr. Lomax Gwathmey conducted a Surgical Clinic in which Dr. B. M. Baker discussed skin grafts; Dr. N. F. Rodman spoke of the office treatment of varicosities; and Dr. James T. Gwathmey, of New York, presented a consideration of some of the newer anesthetics.

In the Pathological Clinic under direction of Dr. Wm. B. Newcomb, Dr. Edward T. Hargrave described a rather unusual type of Ovarian Tumor, and Dr. Newcomb spoke of Liver Function tests.

Dr. W. P. McDowell conducted a Clinic on Pediatrics in which he spoke of Infantile Tetany, and Dr. Frank D. Wilson discussed Rickets.

In the Obstetrical and Gynecological Clinic directed by Dr. C. J. Andrews, Neoplastic Disease of the Pelvis was discussed by Dr. Chas. W. Doughtie. Dr. L. F. Magruder spoke of the indications for the use of Radium. Dr. Millard B. Savage demonstrated Pelvic Measurements; Dr. G. Bentley Byrd spoke on Prenatal Care; and Dr. Andrews discussed Leucorrhoea and Vaginismus, bringing to a close a session that was crowded with helpful material.

A complimentary luncheon was then served in the Hospital dining rooms to all present.

The afternoon session was held in St. Vincent's Hospital and was of equal interest as the morning.

Dr. R. L. Payne spoke on Kidney conditions and with his associate, Dr. R. DuVal Jones, presented a number of typical cases. Dr. Jones then presented a case and discussion of Thrombo-Angiitis Obliterans.

In the Roentgenological Clinic arranged by Dr. Clayton W. Eley, Dr. James W. Hunter illustrated the Diagnosis of Chest Conditions, while Dr. L. F. Magruder presented an X-ray Study of the Urinary Tract. Dr. S. B. Whitlock discussed the Diagnosis and Treatment of Giant Cell Carcinoma, after which Dr. Eley talked on Gall-Bladder conditions.

The Medical Clinic conducted by Dr. W. B. Martin dealt with Cardiac and related subjects and was participated in by Drs. Martin and M. S. Fitchett.

In the Dermatologic Clinic, Drs. Jas. W. Anderson and Raymond D. Kimbrough presented a large number of most interesting skin lesions and discussed their treatment.

The Urological Clinic under charge of Dr. B. E. Harrell closed the afternoon session with a discussion of Benign Hypertrophy of the Prostate by Dr. Harrell, and a talk by Dr. Thos. V. Williamson on Kidney Stones.

Expressions of satisfaction with the work of the day were heard on every hand, the out of town visitors being especially complimentary in references to this new departure, with many hopes being voiced that similar clinics should be made a regular procedure in future.

A complimentary dinner was served at the Norfolk Country Club and social intercourse held sway until time for the evening session, which, though not really a part of the Clinic, brought the day's proceedings to a close most appropriately. The evening was the time for the regular monthly session of the Eye, Ear, Nose and Throat Section of the Norfolk County Medical Society, and Dr. Chevalier Jackson, of Philadelphia, had been secured to discuss "Bronchoscopy as an Aid in the Diagnosis and Treatment of Disease of the Lung, illustrated by Chalk Talk, Lantern Slides and Moving Pictures. This demonstration drew a large audience, the members of the Tidewater Dental Association having been invited, and many ladies showing deep interest in the subject matter of discussion.

It is regretted that space would not admit of a resume of many of the addresses of the day. A great deal of practical value was brought out, the program being of high order throughout.

At a subsequent meeting of the Norfolk County Medical Society it was definitely decided to make such a Clinic at least an annual event, many favoring even more frequent gatherings.

LOCKBURN B. SCOTT, M. D., *Secretary.*

Patrick-Henry Medical Society.

The regular quarterly meeting of the Patrick-Henry Medical Society was held in Dr. G. B. Dudley's office, Martinsville, Va., April 3, 1930, with Dr. W. C. Akers presiding. Following a short business session, a very interesting program was rendered by local members. Dr. John Shackelford gave a very instructive talk, with case reports, on "A Special Type of Influenza Puerperal Sepsis," while Dr. G. B. Dudley read a paper on the "Relation of the Eye to General Diseases." The meeting adjourned at 9:30 P. M.

The next regular meeting is to be held at Patrick Springs Hotel in Patrick County.

W. N. THOMPSON, M. D., *Secretary.*

The Mecklenburg County Medical Society

Held its first spring meeting at South Hill, Va., April 15, 1930, under the presidency of Dr. C. V. Montgomery, of South Hill. The meeting was most interesting and largely attended, there being fourteen of the eighteen county members present, besids a group of Brunswick and Lunenburg County doctors and several Richmond and Petersburg physicians. The Department of Clinical Education of the Medical Society of Virginia in cooperation with the county society assisted greatly in providing a most interesting program. The clinical demonstration of Pellagra, showing several cases in different stages, was well discussed and proved to be most interesting and instructive. Dr. H. H. Ware, Richmond, gave a demonstration of Prenatal Examination and Care in Obstetrics. Papers were presented by Drs. W. W. Wilkinson, LaCrosse, on "Eclampsia," Dr. J. Allison Hodges, Richmond, on "Neuropsychic Cases," and Dr. Carrington Williams, Richmond, on "Early Symptoms of Cancer." Dr. L. H. Bracey, South Hill, was elected to membership in this society. A committee of citizens and a committee from the American Legion Post of Mecklenburg County presented a proposal to raise funds for a county hospital, which would be staffed and run by the county physicians. A county protective credit system was also presented to the Society.

The next meeting of the Mecklenburg County Medical Society will be held in Clarksville in September, at which time will be held the election of officers.

A. T. FINCH, M. D., *Secretary.*

Book Announcements

Diseases of the Skin: Treatment in Detail. By NOXON TOOMEY, M. D., F. A. C. P., St. Louis, Mo. Cloth. 512 pages, large octavo. Price $7.50. St. Louis: Lister Medical Press, April, 1930.

This volume is the third and last volume of the treatise on Diseases of the Skin, and deals entirely with treatment, the first and second volumes dealing with pathology and diagnosis in their respective order. The book is thoroughly revised and entirely up-to-date, detailing the latest word in skin therapeutics. However, this is not to be considered a mere compendium of existing works on skin diseases, but as the author states, his purpose having been "to present cutaneous therapeutics in a form originating in his own experience there has been, with but very few exceptions, no mere rewording of what has been written on the subjects discussed." Though the scope of the book is quite extensive, the subject has been carefully and painstakingly worked up, a very logical and orderly sequence in classification presented, and full details of treatment given. Particularly complete and valuable is the discussion on syphilis; its various stages, and the therapeutic variations necessary in them. The work should prove to be of especial value to general practitioners as a reference work.

E. N. P.

Lectures on Colonic Therapy. Its Indications, Technic and Results. By O. BOTO SCHELLBERG. Illustrated. The Oboschell Corporation. New York City. Octavo of 55 pages. Paper. Price $2.00.

The Normal Diet. A Simple Statement of the Fundamental Principles of Diet for the Mutual Use of Physicians and Patients. By W. D. SANSUM, M. S., M. D., F. A. C. P., Director of the Potter Metabolic Clinic, Department of Metabolism, Santa Barbara, Calif. Third Revised Edition. St. Louis. The C. V. Mosby Company, 1930. Octavo of 134 pages. Cloth. Price $1.50.

Trauma, Disease, Compensation. A Handbook of Their Medico-Legal Relations. By A. J. FRASER, M. D., Chief Medical Officer, Workmen's Compensation Board, Winnipeg. Philadelphia. F. A. Davis Company. 1930. Octavo of 524-xiv pages.. Cloth. Price $6.50 net.

Varicose Veins. With Special Reference to the Injection Treatment. By H. O. McPHEETERS, M. D., F. A. C. S., Director of the Varicose Vein and Ulcer Clinic, Minneapolis General Hospital; Attending Physician New Asbury, Fairview and Northwestern Hospitals, Minneapolis, Minn. Second Revised and Enlarged Edition. Philadelphia. F. A. Davis Company, 1930. Octavo of 233 pages. Illustrated with half-tone and line engravings. Cloth. Price $3.50 net.

Venereal Disease. Its Prevention, Symptoms and Treatment. By HUGH WANSEY BAYLY, M. C., Hon. Secretary Society for the Prevention of Venereal Disease, Late Surgeon R. N. (Temp.); Medical Officer in Charge, Venereal Blocks, Rochester Row and Grove Military Hospitals, etc. Fourth (American) Edition. Philadelphia. F. A. Davis Company. 1930. Octavo of 242-xii pages. With three colored plates and 74 illustrations in the text. Cloth. Price, $3.50 net.

Cancer of the Breast. By WILLLIAM CRAWFORD WHITE, M. D., F. A. C. S., Junior Surgeon to the Roosevelt Hospital; Consulting Surgeon to the New York Nursery and Child's Hospital; Fellow New York Surgical Society. Harper's Medical Monographs. Harper & Brothers. New York and London. 1930. 12 mo. of 221 pages. Illustrated. Leatherette. Price, $3.00.

XUM

President's Message

When the Medical Society of Virginia elected me its President, I determined to try to find out some of the needs of the profession, so that I might make suggestions which should be of practical service. Since that time, I have attempted to find out some of our difficulties, and the one which stands out foremost is the need of better local organization and cooperation. Medical societies have two distinct sides, the one scientific and the other business. The two, however, do not necessarily go hand in hand, and it is frequently better to try to take care of them in different ways, but each county will have to study out its problem and try to solve it in the best way possible.

The Constitution and By-Laws of the Medical Society of Virginia recognize this fact, and allow a combination of counties into Group Societies. Thus, Article III of the Constitution reads: "The State of Virginia shall be divided into component societies of one or more counties."

It, however, attempts to give representation to each county unit as shown in Article IV, Section 2 of the By-Laws: "Each component society shall elect annually to membership in the House of Delegates, one delegate and one alternate for each thirty-five (35) members or major fraction thereof, or as the component society may elect, one delegate and one alternate from each county in such component society. In any event, each component society is entitled to at least one delegate and one alternate in the House of Delegates."

From this by-law it can be seen that when two or more counties join into one society for the purpose of getting better scientific programs, each county is nevertheless entitled to its delegate. It appears, however, that some of these combination societies have not taken advantage of this privilege.

The State of Virginia, as we all realize, varies greatly in different sections. There are some counties which contain fairly large cities, other counties are very sparsely settled, indeed a county may be so small that it can barely support one physician. It is, therefore, totally impracticable to make one rule which will apply equally well to all of the county societies.

For our Scientific and Educational programs it is certainly advisable to have some of the counties of the State grouped into societies of two or more counties. But even then it is necessary to strictly individualize. It will be perfectly feasible in one instance to have the councilor district group as one society. In another case, such as the First District, it would be entirely impracticable.

When it comes to the question of business of the Medical Profession, our local societies take on an entirely different aspect. In this case, the scientific group society will not be able to function as well as the county unit, for each county has business problems of its own. To make myself understood better, I will specify a few such points. There are times, such as when the State Legislature is going to meet, when it is advisable that the Medical Profession interview the legislators, or better still the candidates for the Legislature, and try to impress them with the aims and needs of our profession, as local men are always much better able to reach the individual legislator, than the officers of the State Society. For this purpose the Medical Society of Virginia has attempted to have a local committee in each county. Such a committee should be appointed by the local society, and where appointed, these committees have been very efficient. The county society would likewise be of great service when an epidemic should appear. For it has been shown that the State Board of Health and the local Health Officer can act more efficiently when they have been able to get into contact with the local men through their society and get their cooperation. This was very beautifully shown in the epidemic of Polio which appeared in Roanoke last summer. Added to these two important functions, will arise more and more occasions in which the medical men practicing in a county will need to cooperate for their common good, as Organized Business and Labor Unions are continuing to press more hardly upon us. It will not be necessary for local units to meet often, they may even only meet at the session of their group society, when they can get together around a lunch table. At this time they can elect a president, a secretary and a delegate to the Medical Society of Virginia, one man, of course, being able to hold

two of these positions. This is being done by the county groups of the Post-Graduate Society, which apparently is working well. This meeting together, preferably at a meal, brings the doctors practicing in one county into closer touch, makes them understand each other better, and as a result tends to do away with unfortunate jealousies which are due largely to the fact that the men do not see each other often enough to realize their individual good points.

Such a type of organization appeals to me as a practical solution of our problem. I, however, would like to get an opinion from other men on the subject, and will gladly welcome any suggestions which the members of the Medical Society of Virginia may be willing to send me.

CHARLES R. GRANDY, M. D.,
President, Medical Society of Virginia.

Woman's Auxiliary, to the Medical Society of Va.

National Auxiliary to Meet in Detroit, Mich.

The annual meeting of the Woman's Auxiliary to the American Medical Association is to be held in Detroit, Mich., June 23 to June 27, 1930.

Dr. Rollin H. Stevens is General Chairman of the Convention.

Dr. Alexandria W. Bain is Chairman of Entertainment for the men.

Mrs. Burt Shurley has the entertainment for the ladies and has planned many enjoyable parties for their pleasure. Some of the outings include boat rides, motorcades, visits to Henry Ford's and Edsel Ford's estates, and others of interest.

Auxiliary Headquarters will be at Hotel Fuller, which is across the street from the Men's Headquarters at Hotel Statler.

Mrs. Basil L. Connelly is Local Chairman of all Auxiliary affairs in Detroit for the National.

All meetings, Registration, and a Subscription Luncheon will be held at Hotel Fuller.

The Local Auxiliary expects to give a party honoring Mrs. Wm. Gerry Morgan, the National Presidents and Officers of the Auxiliary.

TENTATIVE PROGRAM

Monday, June 23, at 2 P. M.

Executive Board meeting at Hotel Statler.

Tuesday, June 24, at 9:30 A. M.

General meeting at Hotel Fuller followed by luncheon at which the two A. M. Presidents, Dr. Malcolm Harris and Dr. Wm. Gerry Morgan and the five members of the Advisory Council will bring their messages of inspiration and advice to the Auxiliary.

Wednesday, June 25, at 9:30 A. M.

Educational meeting. Round table for State Presidents and Program Chairmen.

Election of Officers.

Thursday, June 26, 9:30 A. M.

Past Executive Board meeting.

10:30: Lantern Lecture, "Foreign Body and Lye Accidents" by Dr. Chevalier Jackson, of Philadelphia.

It is earnestly hoped that the women of Virginia will make every effort to attend this meeting in Detroit to "get the vision" of what other States are doing for the benefit of themselves, their homes, their States and for humanity.

The above report is from The National Social Committee of which Mrs. Southgate Leigh is Chairman and the following are the members:

Mrs. William Gerry Morgan, Washington, D. C.

Mrs. Olin West, Chicago, Ill.

Mrs. Walter Jackson Freeman, Philadelphia, Pa.

Mrs. Basil L. Connelly, Detroit, Mich.

Mrs. L. J. Harris, Jackson, Mich.

MRS. SOUTHGATE LEIGH, *Chairman.*

Study Programs for County Auxiliaries.

The Woman's Auxiliary to the American Medical Association, under the supervision of the A. M. A. Advisory Council, has prepared STUDY PROGRAMS FOR COUNTY AUXILIARIES, that they may assist actively in the promotion of Health Education programs under the direction of State, County and City Health Department Boards of Health and local Medical Associations. Ask your local Medical Society to give you a program of educational work which will assist them.

Common Defects in Children

WHY CORRECT PHYSICAL DEFECTS IN CHILDREN?

Why should communities spend money and time and energy to see that all their children

have good eyesight, normal hearing, healthy noses and throats, sound teeth, normal weight and correct posture?

The State health departments are eager to assist every county in the organization of work for the protection of the children of the community, in order that they may have a chance to grow up into strong, keen, alert men and women. No longer are children expected to grow up without scientifically balanced food. Special checks are made, in various localities, on their bodily conditions, to see whether they are functioning normally.

Soon every state will begin to realize that sound health and proper growth in children does not just happen, but that they have to be developed and encouraged and protected.

Underweight and Malnutrition

Underweight and malnutrition are not by any means due to poverty. They are very often due to ignorance on the part of the parents. Malnutrition is two and a half times as prevalent in country children as in city children.

A much greater proportion of city than rural children have milk, eggs, green leaf vegetables (raw as well as cooked), and citrus fruits in their daily rations. There are actually on record cases of rural children who cannot have milk at home "because father says he needs it for the calves."

In an examination a few years ago of groups of Kansas City Children from different parts of the city, a greater proportion of malnutrition and underweight was found in one of the best residence sections than in the Italian district. The more fortunate (?) children were pampered and probably ate so much of sweets that they had no appetite for simple wholesome food.

Underweight in the school child may be due to improper feeding or to lack of rest and sleep at home. Some cases of underweight are due to infections such as those of the nose and throat. Connected with the underweight is usually faulty posture, but this faulty posture in most cases is due to lack of strength and to the lack of deep breathing. So in the group of underweight children one finds a few with specific infections such as tuberculosis, diseases of the nose and throat, chronic inflammation of the stomach and bowels; but for the most part such children have home conditions to thank for their weakness, faulty posture and consequent ill health.

It is on account of the realization of all these facts that educators and physicians all over the world are asking for a periodic and thorough-going examination of all school children, and the correction of their defects and also the improvement of their home conditions.

This can be accomplished only by the wholehearted cooperation between the physician, the public health nurse, the teacher and the parent.

It is evident in view of these facts that any complete health program must include:

(a) The early discovery of these physical defects in children, and

(b) The securing of their correction by scientific medical care, or when necessary, surgical intervention.

Ears

A few years ago 7,500 children in Chicago schools were examined and 3.6 per cent were found to have some form of ear disease. It was estimated that at that rate Chicago probably had 15,000 in the city schools similarly afflicted. Other cities making similar tests report about the same percentage.

The prevalence of deafness in the United States is appalling. Most cases start in childhood, and the sad thing about the situation is that with proper care 80 per cent of the cases of deafness might have been avoided.

Little can be done for the child who is deaf as the result of syphilis or meningitis. Sometimes a severe mastoid operation leaves deafness, for which nothing can be done. But much can be done for the child who has become deaf as a result of the contagious diseases, from repeated colds in the head, from frequent earache, or from blowing his nose improperly, from stoppage of the eustachian tube (the tube going into the ear from the throat), or because of diseased tonsils and adenoids.

But from whatever cause, the child who does not hear well must first be discovered, and when he is discovered, he must be given scientific care. Eighty Per Cent of the Cases Can be Cured, But Only if Treated Early.

(To be Continued)

Department of Clinical Education

OF THE MEDICAL SOCIETY OF VIRGINIA

Continuation Education for Practitioners.

The distinctive features of the constructive work being done for the Continuation Education of Practitioners in Virginia, are first, definite plans to bring the advances of modern medical progress to those neeessarily out of contact with recent scientific developments, and second, thus reflexly stimulate scientific interest throughout the profession in Virginia, which will mobilize more unitedly increased interest in scientific medicine and in our State Society, and thus ultimately necessitate thoroughly organized courses in Post-Graduate instruction in our two Medical Colleges.

This is in no sense a dream, nor impossible, for already, due to these activities and others being instituted along different lines by the component societies, there has been noted a very decided improvement in professional zeal for greater and more unified interest in medicine in different sections of the State. Regular Society meetings are being more largely attended, and everywhere is manifest a greater desire, not only to acquire more knowledge of current scientific interest, but to share these advantages with others less fortunately situated.

This is but the beginning of the end, for it seems that the medical profession is being aroused to the necessities of its own aims more universally than has been noticeable in recent years. The class of work reported at many of the regular County meetings is also of a higher standard, and professional tendencies are eminently on a better plane of endeavor and accomplishment.

After trial of different methods, the demonstration clinics of different diseases, with diagnostic differences stressed, have been found to be the most concise and comprehensive method of instruction. These conference meetings with exhibition of the disease-expressions in the clinic patients appear to be also, the most favored by attending physicians.

It seems particularly fortunate that this Department is able in some measure thus to aid and accentuate this movement for the better equipment of our practitioners throughout the State, but it needs and requests the earnest support of each Society member. The only return asked by this Department is that acknowledgment of the cooperation be made on all printed announcements by local county or group societies.

Scheduled Meetings

——The Graduate Clinics at the University Hospital, are being held on May 1st, 2nd and 3rd, as this issue goes to press. These will be diagnostic and therapeutic clinics and will be given by members of the medical faculty of the University of Virginia.

This Department has been pleased to cooperate with the University Faculty, and is confident that this fifth session in the series of Post-Graduate Clinics given at this institution, has been of great interest and value, as all the former ones have been, to the attending physicians and surgeons.

——Beginning on Monday, May 12th, at 8 P. M., a series of Graduate Clinics will be held by the Medical College of Virginia, continuing throughout the two following days. The introductory address on the occasion will be delivered by Dr. William J. Mayo, Rochester, Minn., at the John Marshall High School Auditorium, at 8:30 P. M. This address will be the first annual Stuart McGuire lecture, established by the Medical College of Virginia in recognition of Dr. McGuire's services to the institution, to medical education and to surgery, and will initiate the clinic series. On May 13th and 14th, the college will conduct a series of post-graduate clinics, to all of which a most cordial invitation to attend, is extended all members of the medical profession. These clinics will emphasize surgery with special reference to the general practitioner and are arranged as follows:

Tuesday, May 13, 1930

10:00 A. M.—Surgery as Practiced by the General Practitioner. Dr. Hubert Royster, Raleigh, N. C.

10:30 A. M.—Transportation of Injured. Dr. C. M. Scott, Bluefield, W. Va.

11:00 A. M.—Management of Injuries of Hands and Forearms. Dr. M. A. Johnson, Jr., Roanoke, Va.

11:30 A. M.—The Treatment of Infections of the Extremities; Also Boils and Carbuncles. Dr. Joseph T. Buxton, Newport News, Va.

12:00 M.—Burns. Dr. F. S. Johns, Richmond, Va.

12:30 P. M.—Leg Ulcer. Dr. Hugh Trout, Roanoke, Va.

1:00 P. M.—Luncheon and visits to laboratory, museums and wards.

3:00 P. M.—First Aid Treatment of Wounds of Head,

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Face and Jaws. Dr. C. C. Coleman, Dr. Guy Harrison, Richmond, Va.
3:30 P. M.—Injuries of the Eye. Dr. Hunter McGuire, Winchester, Va.
4:00 P. M.—Treatment of Acute Infections of the Ear, Nose and Throat, Including Middle Ear Disease and Peritonsillar Abscess. Dr. Harry Stone, Roanoke, Va.
4:30 P. M.—Round Table Discussion.

Wednesday, May 14, 1930

10:00 A. M.—Use of Aspiration and Puncture Needles in the Chest, Abdomen, Joints and Spine. Dr. William B. Porter, Richmond, Va.
10:30 A. M.—Local and Regional Anesthesia. Dr. E. S. Boice, Rocky Mount, N. C.
11:00 A. M.—Uses of Plaster and Splints. Dr. B. H. Kyle, Lynchburg, Va.
11:30 A. M.—Prevention of Deformities Following Poliomyelitis. Dr. D. M. Faulkner, Richmond, Va.
12:00 M.—Acute Abdomen. Dr. W. L. Peple, Richmond, Va.
12:30 P. M.—Gunshot and Other Penetrating Wounds of the Trunk. Dr. Carrington Williams, Richmond, Va.
1:00 P. M.—Luncheon.
2:00 P. M.—Treatment of Shock in the Home. Dr. Bolling Jones, Petersburg, Va.
2:30 P. M.—Immediate Treatment of Laceration of the Birth Canal. Dr. H. H. Ware, Jr., Richmond, Va.
3:00 P. M.—Methods of Examination of the Rectum and Anus. Dr. E. H. Terrell, Richmond, Va.
3:30 P. M.—The Use and Abuse of Urethral Instrumentation. Dr. R. C. Bryan, Richmond, Va.
4:00 P. M.—Round Table Discussion.

Registration—The headquarters for the clinics will be located in McGuire Hall, 12th and Clay Streets, where those who will attend are requested to register. Clinic programs and other information will there be available and direction will be given to the several buildings where the clinics will be held. Registration will begin at 9:00 A. M.; no fee will be charged.

The Department of Clinical Education of the Medical Society of Virginia, which is cooperating with the College, hopes that the subject-matter of this class of clinics as well as the variety and continuity of clinical thought and its application, will appeal generally to the profession, and that there will be a large attendance.

——At a later date, a combined clinical and scientific meeting will be held in the Northern part of the State, probably at Harrisonburg, and another at a still later date at Roanoke.

——It is hoped, also, next Fall to have similar meetings at Fredericksburg, Lynchburg, and Roanoke, and several other meetings in various thickly populated county districts of the State.

——It appears now that, by request, meetings will be held next year at every point where they have already been held, and this is not only encouraging, but distinctly expressive of their value and interest to the profession.

Additional Meetings

The following programs have been sent the Monthly, with the statement that all doctors are invited and will be welcome at all meetings:

——Roanoke Academy of Medicine: President, Dr. J. D. Willis, Roanoke; *Secretary*, Dr. Charles A. Young, Roanoke: *May* 23, 1930. Dr. Charles F. McCuskey, of the Mayo Clinic, Rochester, Minn., will be an invited guest and his subject will be "Anesthesia." Meeting will be held at the Elk's Club.

——Richmond Academy of Medicine: *President*, Dr. Wm. H. Higgins, Richmond; *Secretary*, Dr. Mark W. Peyser, Richmond; *Chairman Program Committee*, Dr. Finley Gayle, Richmond: *May* 13, 1930. Papers by Dr. Karl Blackwell, Richmond, and Colonel William L. Keller, of Walter Reed General Hospital, Washington, D. C., and

May 27, 1930. Papers by Dr. Walter Freeman, of St. Elizabeth's Hospital, Washington, D. C., and Dr. Ambrose McGee, Richmond.

Recent Meetings

Elsewhere under "Proceedings of Societies" will be found reports of the recent meetings held at Norfolk and at South Hill, written by their respective secretaries.

——The meeting just held in Richmond by the Richmond Academy of Medicine, and sponsored by this Department, was a valuable training school for all who attended.

In the various demonstrations and clinics held, it was particularly noticeable that the different lecturers and clinicians, spoke not so much as specialists, as they did as teachers and practical physicians, thus exemplifying the high art and genius of scientific instruction. Only the main features, pathologic and diagnostic, were discussed, and "the attentive student," to quote our beloved John Staige Davis of other days, could not fail to be impressed, and remember at least the distinctive and salient points of each case illustrated

The attendance was large, but not as many nearby out-of-town physicians were present as could have been desired, but there was a number of practitioners present from more distant parts of the State.

The program was as follows:

Afternoon Session

2:00 P. M.—Demonstration of Electrocardiograph. Dr. Bond and Miss Read.
2:15 P. M.—Demonstration of Basal Metabolic Apparatus. Dr. Bond and Miss Read.
2:30 P. M.—Neuro-Surgical Clinic. Dr. C. C. Coleman and Dr. J. G. Lyerly.
2:45 P. M.—A Discussion of Secondary Anemia. Dr. D. C. Ashton.
3:00 P. M.—The Principle of Goldberger's Treatment of Pellagra. Dr. Jas. H. Smith.
3:15 P. M.—Demonstration of Neurologic Cases. Dr. Finley Gayle, Jr.
3:30 P. M.—Operative Treatment of Pericardial Adhesions. Dr. F. S. Johns.
3:45 P. M.—Carcinoma of the Stomach. Dr. J. S. Horsley, Sr. Constructive Surgery of the Face. Dr. J. S. Horsley, Jr.
4:00 P. M.—Cerebro-Spinal Syphilis. Dr. Beverley R. Tucker.
4:15 P. M.—A Demonstration of Pelvic Measurements. Dr. Greer Baughman.
4:30 P. M.—Treatment of Pneumonia in Infants. Dr. B. B. Jones.
4:45 P. M.—Cholecystography. Dr. D. D. Talley.

Night Session

Case Report—Paroxysmal Ventricular Tachycardia. Dr. J. Morrison Hutcheson.
Paper—The Specific Treatment of Erysipelas. Dr. H. L. Amoss, Invited Guest, Duke University, Durham, N. C.
Paper—Tardy Symptoms of Congenital Lesions. Dr. O. H. Perry Pepper, Invited Guest, University of Pennsylvania, Philadelphia.

——On Saturday, April 26th (too late to be reported in this issue), the Clinch Valley Medical Association held its Spring meeting at Richlands, near the Kentucky line, Dr. Isaac Pierce, Tazewell, President, Dr. C. B. Bowyer, Stonega, Secretary, and Dr. W. R. Williams, Chairman of local Committee of Arrangements.

This Department aided in arranging the program, and Dr. Manfred Call, a member of the Department of Clinical Education of the State Society, was present as an observer, while Dr. Chas. R. Grandy, President, represented the Society, and made an address at the morning session.

The afternoon session was devoted to the following program:

Meeting Called to Order 1:00 P. M.

1:00 P. M.—"Pneumonia and Its Complications." Dr. James C. Flippin, Dean Clinical Medicine, University of Virginia. Discussion.
2:00 P. M.—"The Gall-Bladder." Dr. Stuart McGuire, McGuire Clinic, Richmond. Discussion.
3:00 P. M.—"Some Neglected and Some Debatable Practices in Obstetrics." Dr. Benj. H. Gray, Stuart Circle Hospital, Richmond. Discussion.
4:00 P. M.—"Clinic-Pediatrics." Dr. Lawrence T. Royster, Department of Medicine, University of Virginia. Discussion.
5:00 P. M.—"Evolution of a Health Department." Dr. Ennion G. Williams, State Health Commissioner, Richmond. Discussion.

Specimen Letters

The following sub-joined letters are inserted in these columns in order that the members may see some of the methods used by this Department in aiding those local societies that request cooperation in holding meetings.

The Department also aids in selecting lecturers or clinicians if desired, in addition to the local speakers, or in any other way requested.

The dominant idea is simply to aid and cooperate, only as requested, and to inform by follow-up letters, all of the surrounding physicians of the opportunities being offered by the local society.

Later, other means of Continuation Education for Practitioners will be stressed and used.

As a specimen of a recent letter written in regard to holding a meeting in a specified location, the following example is given:

"Our Department of Clinical Education wishes to join with your local Society in putting on a combined clinical and scientific meeting sometime this Spring or Summer, if it is agreeable to your local Faculty, and I am writing to ask you to look over the ground, and see what you think the reaction of the profession in and around your city would be to this action on the part of the Medical Society of Virginia.

We simply wish to be of assistance, not dictating in any sense, but co-operating in the fullest measure. If you happen to have the last two issues of the Monthly, you will see about what we are trying to do, and our object ultimately is to arouse enough interest to be able to carry the advances of modern medicine to all practitioners out of reach of contacts, and in the future reflexly benefit the State Medical Society, and arouse a sentiment from the profession that will ultimately tend to the establishment of regularly organized post-graduate courses in our medical colleges.

If you feel that your local members, either as a local Society, or in conjunction with neighboring local groups, could have a clinical meeting, such for instance, as you will see noted for April 26th, at the Clinch Valley meeting, or the Richmond meeting on April 22nd, we would appreciate hearing from you at your earliest convenience."

As a specimen of a follow-up letter after meeting place and date have been determined, a copy of the following most recent letter is offered, signed by the Acting Executive Secretary:

"To the Profession:

The University of Virginia, as announced, will hold Graduate Clinics at the University Hospital on May 1st, 2nd and 3rd.

This will be the fifth in a series of such post-graduate clinics, and offers an unusual opportunity to study the approved advances of Modern Medicine.

All of these former clinic series have received general commendation from the profession, one of the late Presidents of the State Society, who had

attended three of the preceding clinics, having remarked recently: 'Nothing in recent years has helped me so much professionally as those clinics.'

The Department of Clinical Education of the Medical Society of Virginia heartily endorses this method of Continuation Education for Practitioners, especially by such eminent teachers, and hopes that a large number of the State Society members will take advantage of the clinical privileges thus offered.

If possible, arrange now to attend all three days—it will benefit both yourself and your patients.

Respectfully,

ACTING EXECUTIVE SECRETARY.

Date—May 1st, 2nd, 3rd, 1930.
Place—University Hospital"

The above are given, and repetitions have been frequently made in these columns, because this Department, the servant of the Society, is anxious that every member of the State Society shall thoroughly understand its methods and aims, and understanding, shall join hands and hearts in appreciative interest and sympathetic personal help.

INFORMATION

All members of the State Society are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Acting Executive Secretary, Mr. George W. Eutsler, P. O. Box 707, University, Va., or to the Chairman of the Department of Clinical Education, 5 East Franklin Street, Richmond, Va.

The Truth About Medicine

In addition to the articles enumerated in our letter of February 21, the following have been accepted:

Eli Lilly & Co.
- Merthiolate Jelly, Lilly.
- Merthiolate Ointment, Lilly.

E. R. Squibb & Sons
- Squibb's Dextro-Vitavose.

Frederick Stearns & Co.
- Synephrin
  - Synephrin Solution "A"
  - Ampoules Synephrin—Procaine, 3 c.c.
  - Hypodermic Tablets Synephrin—Procaine.

The following article has been exempted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1929, p. 481):

G. D. Searle & Co.
- Stable Solution Dextrose and Sodium Chloride (Searle).

NEW AND NON-OFFICIAL REMEDIES

Butesin Picrate Eye Ointment.—An ointment containing 1 per cent of butesin picrate (New and Non-official Remedies, 1929, p. 54), in a petrolatum base. Abbott Laboratories, North Chicago.

Pneumococcus Antibody Solution, Types I, II and III Combined—Mulford. (New and Non-official Remedies, 1929, p 346).—This product is also marketed in packages of four 50 c.c. double-ended vials with one complete intravenous outfit. H. K. Mulford Co., Philadelphia.

Ampules Dextrose (d-Glucose) 10 Gm., 20 c.c.—Each ampule contains dextrose (New and Non-official Remedies, 1929, p. 240), 10 Gm., in distilled water, to make 20 c.c. Lakeside Laboratories, Inc., Milwaukee, Wis.

Ampules Sodium Cacodylate 0.243 Gm. (3¾ grains), 5 c.c.—Each ampule contains sodium cacodylate (New and Non-official Remedies, 1929, p. 73), 0.243 Gm. (3¾ grains), in 5 c.c. of solution. Lakeside Laboratories, Inc., Milwaukee, Wis. (Jour. A. M. A., March 1, 1930, p. 634).

Squibb's Dextro-Vitavose.—A mixture of Squibb's vitavose (New and Non-official Remedies, 1929, p. 244), 1 part, and dextrose, 2 parts. E. R. Squibb & Sons, New York. (Jour. A. M. A., March 29, 1930, p. 920).

PROPAGANDA FOR REFORM

New Treatments for Cancer.—Hanson reports results closely resembling those described by Coffey and Humber, following the administration of thymus extract. Sokoloff reports similar results following the use of an extract of the suprarenal combined with iron. Charlton announces lytic effects on cancer cells following the administration of an extract of the omentum. The interest of the Coffey-Humber method, in its present stage of investigation, lies primarily in the fact that the available evidence seems to demonstrate a definite effect on cancer tissue as the result of injecting suprarenal extract into the body at points removed from the tumor. (Jour. A. M. A., March 1, 1930, p 639).

Cascara-Agar Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that, under the name "Cascara-Agar," the Reinschild Chemical Co. markets a preparation stated to contain "15 per cent of a watery percolation of two-year-old cascara bark, which is processed into No. 1 Agar, cut to size" and is recommended for use in constipation. It is stated on the trade package that the preparation is: "A harmless vegetable addition to breakfast food. Each teaspoonful contains a mild and specially prepared solution of Cascara Tea." Since no statement as to the amount of cascara contained in the product was given, the firm was asked to make a plain statement of the constituents of the product. The firm replied giving the method of preparation of the product. However, since no details were given as to the method used to "debitter" the cascara, one cannot say how much of the active principle of cascara was lost in the process of preparation and therefore the amount of cascara in a given quantity of the finished product cannot be judged. Experiments carried out lead to the conclusion that "Cascara-Agar" contains at most only a trace of cascara, and that it is misleading to call the preparation "cascara-agar." Information was received that the Reinschild Chemical Co. still markets "Regulin," a product which has been stated to be prepared in the same manner as is "Cascara-Agar." Since the Council does not accept an article under one name if an essentially similar product is marketed by the same firm under another name, this makes "Cascara-Agar" further objectionable. The Council declared "Cascara-Agar" unacceptable because it is an indefinite mixture marketed under a misleading name with unwarranted therapeutic claims, and because an essentially similar product is marketed by the same firm under another name. (Jour. A. M. A., October 26, 1929, p. 1309.)

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Editorial

Vitamins and Deficiency Disease States.

There are well recognized diseased entities, produced in animals, which are due to inadequate feeding of vitamin complexes in food material. These animals present serious gross disturbances and pathological changes. In the instance of a twenty-eight day old white rat, no vitamin A was given for succeeding fifty-three days, with the result that the animal weighed at this period only fifty-six grams and showed marked changes on the eyelids, typical xerophthalmia and swellings of the glands of the neck, while a litter mate of this rat, of the same sex, weighed 123 grams, was healthy, normal, having had an abundance of vitamin A in the diet. Also a rat fed on a diet containing no vitamin B showed at sixty-four days a weight of forty-two grams, while a mate fed on an abundance of vitamin B showed a weight, at a like age, of 178 grams. Further, it was noted that vitamin B_1 (or F) deficiency at twenty-eight days showed, besides loss of weight, a spastic paralysis or polyneuritis and, remarkable to say, a course of feeding of substances rich in vitamin B_1 in twenty-four hours was characterized by a relief of these signs. Again, vitamin B_2 (or G) deficiency in a rat, age thirteen weeks, was shown twenty-nine weeks later by a thinness of the fur, especially on the back, neck and sides of the face, and by sores on the eyes and mouth like those seen in human pellagra. Scurvy was shown in a guinea pig that had been fed on a diet containing no vitamin C. In such an animal, with this deficiency disease, one notes rough fur, lack of vigor, and underweight.

Such gross changes, resulting from inadequate administration in food material wanting in necessary vitamin, are not so easily produced in the human but the growth and development of the young human and the protection against infection and well-being of the adult human, both in middle life and old age, depend in no small way upon the persistent and adequate use in daily dietary regimens of an assortment of vitamins. The dietary balance of carbohydrate, protein, fats and salts is commonly recognized by medical men as necessary for the proper production of heat and energy and physical well-being, but the vital part played in animal life by the vitamins is not sufficiently understood. There must be a wide range of functional disturbances brought about by inadequate vitamin feeding that had not come to the attention of practitioners. If gross changes, such as exophthalmia, polyneuritis, pellagra, scurvy and rickets, appear as deficient diseases in the human, there must exist a state of serious disturbance to the physical sensibilities of the patient prior to the establishment of such advanced pathologic phenomena. It seems then quite obvious that there are probably a large number of young humans, as well as adults, that go through life struggling against an unseen but real vitamin deficiency.

Vitamin A or Fat Soluble A

This substance is essential for normal nutrition and its absence from food brings about a "deficiency" in the animal. It is essential for growth of the baby, and for well-being at all ages and for reproduction. A deficient supply brings about weakening of the tissues of the body. A lack of it renders one more susceptible to bacterial infection, particularly in the epithelial tissues of the body. A total absence of vitamin A in the diet of an animal is followed by certain definite and characteristic pathological changes in these membranes. The eye, for instance, in its total abstinence from daily food supply, suffers from xerophthalmia (dry ophthalmia), atrophic conjunctivitis and dry and lusterless eyeballs. Besides there may be inflammatory and pus formations in ears, sinuses, lungs, skin and bladder. These are often exemplified in animals but are probably in the human body to a more or less degree. A fortunate power of the body is possessed in being able to store this vitamin so that an abundant supply of it, acquired in foods dur-

ing early life, safeguards the body against infections of later life. But observers maintain that vitamin A is not only needed by the young for growth and well-being but also for lactation and reproduction, as well as for resistance against infection in adult life. In the rat, a long time feeding of a liberal amount of vitamin, through succeeding generations has demonstrated increased benefits of growth, strength and well-being. The richest sources of vitamin A are milk and dairy products, eggs, liver and leafy vegetables. The green vegetables are a better source of supply than the white vegetables, for instance, green lettuce is much richer than white lettuce, green asparagus than bleached, yellow than white corn. The following foodstuffs show the "strength" of vitamin A supply: bananas+ to ++; cantaloupes++; cherries (canned)++; orange juice++; pineapple++; asparagus++; beans++; beets++; carrots+++; collards+++; lettuce leaves (green)+++; peas (green)++; spinach+++; tomatoes ++; watercress+++; cheese+ to +++; egg yolk+++; liver++ to +++; cow's milk+++; oysters++; bread (whole wheat milk)++; corn (yellow)++; rye germ++; beef fat++; butter+++; beef kidney++; cod liver oil+++; cream+++; fish liver oils+++; olive oil+; peanuts+; pig kidney fat+; salmon oil++.

Vitamin B or Water Soluble B

Formerly known as water soluble B, vitamin B is now known as vitamin B complex, because it is now known, not as a single substance, but as being made up of at least two independent vitamins. The one was found essential for stimulation of appetite and promotion of growth in rats and other mammals, and this is the antineuritic vitamin; the other is more stable, possessing other properties.

There is at present some want of agreement among investigators concerning the terms to be used in describing these "B vitamins," while the British observers retain the term B for vitamin B complex, by using the term B_1 for the heat-unstable factor which is antineuritic and the term B_2 for the heat-stable factor which is sometimes known as antipellagric vitamin. In connection with this matter of terms, under vitamin B, the American Society of Biological Chemists recently suggested that vitamin B_1 be vitamin F (or antineuritic) and B_2 be vitamin G (antipellagric).

It is interesting to practitioners to understand the bearing of vitamin B_1 in diet in that it is water soluble and is essential for the prevention of polyneuritis in pigeons and fowls and rats, and "possibly beriberi in man." Storage of vitamin B_1 (F) in the body is limited and hence the diet should contain an abundance of vitamin B_1 (F) at all times. In lactation, vitamin B_1 (F) is essential and foods rich in it should be taken by the nursing mother.

Now, vitamin B_2 (G) is relatively heat-stable and a deficiency of this vitamin from food of rats results in retardation of growth and loss of weight; later soreness of the eyes and mouth, and nervousness, irritability, weakness and lethargy appear. These symptoms are followed by diarrhea. These and other symptoms in the rat resemble pellagra in the human. Evidence to prove similarity of these processes is not complete but suggestive. Owing to the difficulty in securing a satisfactory source of vitamin B_1 (F) entirely free from vitamin B_2 (G) says our author of reference, few foods have been tested for the relative distribution of these two vitamins of the B complex. But it may be said that cereal grains appear to be relatively rich in vitamin B_1 (F) and poor in vitamin B_2 (G), while cow's milk and green leafy vegetables are richer in vitamin B_2 (G) than in vitamin B_1 (F).

It is important to remember that the work in this field shows that vitamin B complex is essential for growth and well-being at all ages and especially essential for lactation and should abound in the diet at all times.

It will interest readers to note the foods possessing vitamin B and an indication of the richness of the food in that factor of protection: wheat germ+++; wheat germ extract +++; whole wheat++; rye whole++; rice, polished, polishings and unpolished (brown)++; corn, yellow, whole++; corn, yellow, germ meal++; whole wheat bread ++; tomato, concentrated+++; tomatoes, ripe++; sweet potatoes (raw)++; cooked spinach+; dried spinach++; potatoes, baked or raw++; peas, green, cooked+ to ++; beans++; asparagus, green, raw+++; (cooked 0); prunes++; pineapple++; pears+ to ++; orange juice++; grapefruit ++; lemon juice++; cantaloupes++; apples, raw, fresh+; cabbage++; carrots ++; celery (bleached)++; lettuce++;

okra++; parsnips++; brains++; cheese ++; ham++; liver++; cow's milk++; oysters++; cream++; peanuts++; yeast ++ to +++.

Vitamin C

This is the antiscorbutic vitamin. Absence of vitamin C from the diet of a guinea pig leads to scurvy. Soreness of gums, looseness of teeth, fragility of bones follow. In children lacking in this vitamin, irritability and lack of stamina, want of normal growth, and deficiency in resistance to infectious diseases are symptoms frequently appearing. While cereal grains and legumes are deficient in this vitamin, if allowed to sprout they show a fairly rich amount of it. Vitamin C is found abundantly in citrus fruits, raw cabbage, turnips, and tomatoes (raw, cooked or canned). And as the body stores this vitamin very slightly, diet should include vitamin C at all ages.

One may note the foods which supply vitamin C; apples+ to ++; bananas++; cantaloupes++; grapefruit+++; lemon juice +++; lime juice++; orange juice+++; peaches, canned+ to ++; raspberries++; tangerines+++; cabbage, raw++; carrots ++; lettuce+++; onions, raw++; peas, green (sprouted)+++; pepper, green++; spinach+++; tomatoes, concentrated +++; water cress+++.

Vitamin D—The Antirachitic Vitamin

Cod liver oil as a corrective of rickets was thought to possess a rich supply of vitamin A, but it is now held that the property of promoting assimilation of calcium and phosphorus, thus controlling bone development, rests with another fat soluble vitamin; named vitamin D. Late action of sunlight or ultraviolet light in bone development, in connection with cod liver oil feeding, leads to the knowledge that various food materials can be given antirachitic properties by adequate ultraviolet irradiation. Ergosterol in these foods, under sunlight, becomes antirachitic. As ergosterol is present in the skin, sunlight appears to form vitamin D from skin.

The problem of rickets as well as teeth in development and bone well-being are involved here. Milk and dairy products contain a small amount of vitamin D, but cod liver oil, under proper sunlight influences, serves as the best of all natural resources of vitamin D as it does of vitamin A.

Vitamin E

Vitamin E is the reproductive vitamin or the anti-sterility vitamin. While it is practically absent from cod liver oil, it is present in vegetable oils. One author notes that it is richest in oil of wheat embryo, and is also found in fresh lettuce; also in lesser degree in animal tissue, while milk and butter contain small amounts. This vitamin seems to play an essential part in placental function.

NOTE: For fuller description and elaborate references: Vitamins in Food Materials, by Sybil L. Smith, U. S. Department of Agriculture, Circular No. 80.

News Notes

The American Psychiatric Association

Holds its 87th annual meeting in conjunction with the First International Congress on Mental Hygiene, May 5th to 9th, inclusive, at Hotel Willard, Washington, D. C. Dr. Earl D. Bond, Philadelphia, is president of the American Psychiatric Association, and Dr. William A. White, Washington, D. C., of the International Congress on Mental Hygiene. The secretary of the Psychiatric Association is Dr. Clarence O. Cheney, Poughkeepsie, N. Y., and the secretary of the Congress on Mental Hygiene is Mr. John R. Shillady, New York City.

A summary of the objects and plans and program of the Congress has already been published in the Monthly. On the program of the Psychiatric Association are subjects that are of as much interest to the general practitioner as to the psychiatrist or neurologist, which is an indication of the broadening aspect with which disorders of the mind are being considered, and which proves that psychiatry is not an isolated specialty, but that it is an integral part of the domain of general medicine.

The American Psychiatric Association having been organized in 1844 is one of the oldest national medical organizations in this country. Among the founders of the association were Dr. Francis T. Stribling, who was Superintendent of the Western State Hospital at Staunton, Va., and Dr. John Galt, the Superintendent of the Eastern State Hospital, at Williamsburg, Va., who was also one of the original thirteen members. Its present membership is about 1,350. In this membership are included practically all the psychiat-

rists and neurologists in this State. It was organized as the association of Superintendents of American Institutions for the Insane. In 1892 the name was changed to the American Psychological Association, and in 1921 to its present name. Two Virginians have filled the office of president of the Association—Dr. Robert J. Preston, 1902, while Superintendent of the Southwestern State Hospital, at Marion, and Dr. William F. Drewry, 1910, while Superintendent of the Central State Hospital at Petersburg.

The Association has held several annual meetings in Virginia: At Staunton 1869; Fortress Monroe 1888 and 1915; and at Richmond 1900 and 1925.

University of Virginia Medical News.

At the Founder's Day exercises on April 12th, President Alderman announced that a sum of $200,000.00 had become available for building and equipping a Nurses' Home. Work on this new building, to be erected south of the hospital, will proceed at once.

The American Association of Anatomists held its forty-sixth session at the Medical School on the three days of April 17th to 19th. About 225 anatomists were in attendance. The American Association of Physical Anthropologists also met here at the same time.

On April 26th, Dean J. C. Flippin and Dr. Lawrence T. Royster spoke before the meeting of the Clinch Valley Medical Society, at Richlands, Va. The meeting was held under the auspices of the Department of Clinical Education of the Medical Society of Virginia. Dr. Flippin's subject was Pneumonia and its Complications. Dr. Royster spoke on Digestive Disorders of Childhood.

Dr. Duckett Jones, Instructor in Medicine at the Harvard Medical School, and research fellow at the Good Samaritan Hospital, Boston, spent the week of April 6th at the Medical School.

On April 26th, Dr. Graham Lusk, Professor of Physiology in the Cornell Medical School and Director of the Russell Sage Institute, visited the Medical School. He addressed the first and second year classes on the development of the science of nutrition.

Dr. E. R. Lampson, attending surgeon at the Hartford Hospital, visited the Medical School on April 26th.

Dr. H. E. Jordan spoke at the annual dinner of the Washington Chapter of the Alumni Association on May 2nd.

The fifth Post Graduate-Clinics of the University of Virginia Department of Medicine were held at the Medical School from May 1 to 3.

Dr. Clarence E. McClung, Professor of Biology at the University of Pennsylvania, and Managing Editor of the Journal of Morphology and Physiology, will give the address on the occasion of the public initiation ceremonies of Sigma Xi on April 16th. The Medical Faculty initiate is Dr. D. C. Smith.

Dr. W. H. Goodwin will address the University of Virginia Medical Alumni, of New York City, on the night of May 16th.

Dr. W. T. Sanger, President of the Medical College of Virginia, gave the principal address at the graduation exercises of the University of Virginia Hospital Training School for Nurses, on May 8th.

The White House Conference.

Primarily interested in the conservation of national resources, combined with his consistent interest in the cause of children, President Hoover, last July, called the first meeting of the Planning Committee of the White House Conference on Child Health and Protection. The purpose of the Conference is: to study the present status of the health and well-being of the children of the United States; to report what is being done for child health and protection; and to recommend what ought to be done and how to do it.

Secretary Ray Lyman Wilbur of the Department of the Interior is chairman of the Conference, and Dr. Harry E. Barnard, of Indianapolis, is its director. The personnel of its sections has been chosen from the leaders of the nation in child welfare, and its great number of committees is arranged with such scope that every branch of scientific knowledge regarding children and their care may be reported.

The Conference has been divided into five sections, each subject to be studied in its relation to children's health and success: Medical Service, Public Health Service and Administration, Education and Training, The Handicapped Child (Prevention, Maintenance, Protection), and Public Relations. More than seven hundred experts are serving on these committees. It is probable that a second full meeting may be called in November of this year, for presentation of findings ready at that time.

Reunion of Internes and Nurses.

St. Luke's Hospital, Richmond, Va., was es-

tablished in 1882. The Training School for Nurses was organized in 1886. During the forty-eight years of the hospital's existence it has had over one hundred internes and has graduated over three hundred nurses.

It is planned to have a reunion of the ex-internes and the graduate nurses at the time of the next Commencement of the Training School which will be on May 24, 1930. The arrangements for the meeting are now in the hands of a committee consisting of Dr. W. Lowndes Peple who represents the ex-internes and Mrs. Stuart McGuire who represents the nurses. The programme has not been worked out in all of its details but will consist essentially in a joint luncheon given at the residence of Dr. and Mrs. Stuart McGuire, in separate meetings of the internes and nurses in the afternoon at the hospital, and in the commencement exercises and ball in the evening at the Commonwealth Club. While in Richmond the visiting internes and nurses will be the guests of their former professional associates who live in the city. The occasion promises to be a most enjoyable one.

Married.

Dr. James L. Hamner, Mannboro, Va., and Miss Rebecca Sydnor, of Marlinton, W. Va., April 17th.

Dr. Ernest C. Fisher and Miss Mary McCaw, both of Richmond, Va., April 12th.

Dr. John Staige Davis, Jr., son of Dr. and Mrs. John Staige Davis, of University, Va., and Miss Camilla Ruth Cole, daughter of Dr. and Mrs. Rufus Cole, of New York City, April 26th. Dr. Davis is an alumnus of the University of Virginia, Department of Medicine, class of '25.

Dr. Webster Parker Barnes, class of '26, Medical College of Virginia, and Miss Emmie Mae Marsh, both of Richmond, April 7th.

Dr. Barton Bates McCluer, Bon Air, Va., and Miss Virginia Allen Chapin, Richmond, Va., April 30th.

Stuart Circle Hospital to Build Home for Nurses.

A modern three-story nurses' home, costing approximately $100,000, will be erected by the Stuart Circle Hospital, Richmond, Va. A new unit of the hospital, consisting of an operating suite and laboratories, will be built at the same time. The nurses' home will be of brick construction and will be modern in every respect with rooms for about eighty nurses, a matron and several guests' rooms. The home will also include a gymnasium, infirmary, living room, reception rooms and library. An interesting feature will be the enclosed grass court with fountain, on which the living and recreation rooms will open and which will serve as an outdoor living room during the summer.

The addition to the hospital of the operating suite and laboratory will be the first step in the construction of an entire new section planned to enlarge the hospital facilities. When the present plans are completed the hospital will have a capacity of 125 patients.

Work will start on the new addition on September 1, 1930, and will be completed about September, 1931.

Dr. Herbert C. Jones,

Petersburg, Va., has been elected president of the Petersburg Rotary Club, and will enter upon his duties on July 1st.

Dr. Ashby G. Martin,

New York City, class of '25, Medical College of Virginia, has been appointed assistant attending surgeon, Ear, Nose and Throat Department of St Luke's Hospital, that city.

Dr. Thomas P. Darracott,

Tunstall, Va., received minor cuts and bruises, when knocked down by an automobile in Richmond on April 24th.

M. C. V. Alumni Association in New York.

Between seventy and eighty alumni of the Medical College of Virginia form the active membership of the New York Alumni Association of the Medical College of Virginia. It is the aim of the Association, far as possible, to further the social and professional interests of graduates of the Medical College of Virginia who go to New York to practice or take up interne work. All required is a letter of recommendation from the Secretary of the Alumni Association in Richmond.

Dr. M. Benmosche of the class of '04 is at this time president, and Dr. Patrick M. Carroll class of '16, secretary. Dr. Junius Stephenson, whose death is reported in this issue of the MONTHLY, was vice-president. The first number of the *Bulletin* published by this Association is a Memorial Number to Dr. Stephenson.

Will Attend Philadelphia Meeting.

Drs. Dean B. Cole and Frank S. Johns, Richmond, expect to attend the meeting of the Association for Thoracic Surgery, in Philadelphia, May 12 to 14, inclusive.

XUM

Dr. Charles A. Easley,

Chatham, Va., is now much improved after several months of indisposition.

Dr. and Mrs. J. M. Biedler,

Harrisonburg, Va., recently returned home after a two month's vacation at Hollywood and Miami, Fla.

Dr. Charles M. Caravati

Is now located in his new offices at 807 West Franklin Street, Richmond, and is engaged in general practice.

Mental Hygiene Literature.

In these days when so much interest is being shown in mental hygiene and so much literature is being published relative to the subject, it is worthy of note that probably the first book on the subject was published in 1843. In that year, a book with the ambitious title of "Mental Hygiene, or an Examination of the Intellect and Passions Designed to Illustrate Their Influence on Health and the Duration of Life" was published. The author was Dr. William Sweetser, of Boston, Mass. In 1860, another book with the pleasing title of "Physical and Mental Hygiene, or How to Enjoy Life," was published, the author being Dr. William W. Connell, of Philadelphia. In 1863, a book of 338 pages, entitled "Mental Hygiene" was published, the author being Dr. Isaac Ray, a distinguished psychiatrist and medio-legal authority. These books are most interesting. It is, however, difficult to get copies of them. The organized mental hygiene movement, however, did not start until 1908, following the publication of a very notable book by Clifford W. Beers, entitled "A Mind That Found Itself."

At the International Congress on Mental Hygiene, in Washington, D. C.—May 5th to 10th—there will be a most important exhibit of literature on every phase of the subject. Physicians and others interested in the literature on Mental Hygiene and related subjects may get information from the State Bureau of Mental Hygiene, 1101-5 Bank Street, Richmond, Va., or from the National Committee for Mental Hygiene, 370 Seventh Avenue, New York City.

W. F. D.

News of Southside Community Hospital.

The services of Dr. C. M. Nicholson, Charlotte C. H., Va., have been secured for the surgical work at the Southside Community Hospital, Farmville, Va., during the absence of Dr. Thomas G. Hardy, who has been ill since March, and the departure about the same time of Dr. F. R. Crawford to take up work in China. Dr. Hardy is now reported to be improving.

The past month has been the best in the history of the hospital, all private rooms having been occupied, with a waiting list much of the time. Dr. Nicholson will continue to do the major surgery until such time as a well trained surgeon, resident of Farmville, is obtained.

Dr. F. S. Johns, of Johnston-Willis Hospital, Richmond, continues his weekly visits to this hospital as consultant surgeon.

Dr. C. H. Iden,

Berryville, Va., recently returned home from a visit to Rochester, Minn., where he attended the Mayo Clinic for a while.

Dr. L. H. Bracey,

Of the class of '28, Medical College of Virginia, is now practicing at his former home, at South Hill, Va. Dr. Bracey interned at Hazleton Hospital, Hazleton, Pa.

The Southern States Regional Conference and Social Hygiene Institute

Will be held in New Orleans, May 23-27, under the auspices of the Louisiana State Board of Health and the New Orleans Council of Social Agencies. Several interesting features have been arranged for the program, one of which will be a round table discussion of technical social hygiene problems to be held on May 23rd and 24th. The Regional Conference proper will open on the morning of the 26th and will include addresses by national social hygiene authorities. Members of the medical profession are cordially invited to attend and participate in the Conference. Further information may be obtained from the American Social Hygiene Association, 370 Seventh Ave., New York City.

$3,000 Prize Contest.

A contest for the best literary work on "The Soul of America" has been announced by the National Arts Club, the object of the award being to stimulate the writing of a work which will reveal the soul of America, as distinguished from books in which the authors thoughtlessly praise or condemn the national character. Under the rules of the contest,

manuscripts submitted may be in any literary form—novel, history, poetry or critical essay. For further information, address the National Arts Club, 15 Gramercy Park, New York City.

Dr. Fletcher D. Woodward,

Charlottesville, Va., recently presented a paper before the Cabell County Medical Society, at Huntington, W. Va., his subject being "Foreign Bodies in the Air Food Passages."

The U. S. Civil Service Commission,

Washington, D. C., announces open competitive examinations for the following, applications for which positions will be rated as received until June 30, 1930:

Medical officer, associate medical officer, assistant medical officer; and social worker (psychiatric) and junior social worker.

Copies of Monthly Wanted.

Our file of the September, 1929, issue of the MONTHLY is exhausted. As we have had several requests recently for this issue, especially from libraries for filing purposes, we will appreciate it greatly if any reader who no longer wishes his copy of this number will do us the kindness to let us have it. Address this journal at 104½ West Grace Street, Richmond, Va.

The American Medical Association

Has issued official call for its eighty-first annual session to be held in Detroit, Mich., from Monday, June the 23rd to Friday, June the 27th, 1930. Dr. Malcolm L. Harris, Chicago, is this year's president. Detroit is a lovely city and attendance on this meeting will provide a splendid means of vacation for doctors from this section.

The Medical Society of Virginia, Maryland and District of Columbia

Will hold its regular semi-annual meeting on May 21st, at the Manor Club, Md. Dr. Wm. T. Davis is president; Dr. Robert Scott Lamb, treasurer; and Dr. Joseph D. Rogers, corresponding secretary. All of these officers are of Washington, D. C.

Dr. William F. Drewry,

Director of the Bureau of Mental Hygiene, Richmond, Va., on April the 22nd addressed the Norfolk Branch of the American Association of University Women, at Norfolk, Va., on the subject of mental hygiene.

The U. S. Pharmacopoeial Convention

Is holding its decennial convention in Washington, D. C., May 13th. A large number of eligible organizations and colleges are to be represented, as well as the various services of the Government, and the occasion promises to be of great interest. The Medical Society of Virginia is to be represented by Dr. Alexander G. Brown, Jr., Richmond; Dr. J. C. Flippin, University; and Dr. P. W. Boyd, Winchester. The secretary of the Convention is Dr. Lyman F. Kebler, 1322 Park Road, Northwest, Washington, D. C.

The American College of Physicians

Will hold its fifteenth annual clinical session at Baltimore, Md., March 23-27, inclusive, 1931. The Lord Baltimore Hotel will be headquarters.

Dr. Sydney R. Miller, Baltimore, as President, will have charge of the selection of the general scientific program. Dr. Maurice C. Pincoffs, of Baltimore, has been appointed by the Board of Regents as the General Chairman of the Session, and will make all local arrangements, including the making up of the program of clinics. Business details will be handled by the Executive Secretary, Mr. E. R. Loveland, from the College headquarters, 133-135 S. 36th Street, Philadelphia, Pa.

The attention of secretaries of various societies is called to the above dates, in the hope that their societies will select non-conflicting dates for their 1931 meetings.

Grace Hospital to Double Size.

Plans have been completed for a four-story annex to Grace Hospital, Richmond, Va., to cost approximately $75,000. The annex will be fireproof throughout and will double the present size of the hospital. Fifty new beds, two major and two minor operating rooms, improved X-ray facilities, and a department devoted especially to children will be the new features. The obstetrical department will be increased to fifteen beds, and a complete physiotherapy department will be established in the annex, which is expected to be ready for occupancy before November 1st.

The present organization was purchased from Drs. Bryan and MacLean in July, 1929, by a large number of doctors formed as a corporation. The present officers of the Grace Hospital Corporation are Drs. A. L. Herring, president, J. A. Rollings, vice-president; T. B. Pearman, secretary, and E. T. Trice, treasurer.

XUM

Dr. Page O. Northington,

New York, N. Y., class of '17, Medical College of Virginia, has been appointed associate consultant in otology at the Neurological Institute and assistant attending surgeon, Ear, Nose and Throat Department at Presbyterian Hosptial, New York.

Dr. H. L. Myers,

Norfolk, Va., is one of the contributors to the series of short articles prepared under the direction of the Gorgas Memorial Institute, and released on May the 2nd. Dr. Myers' subject is "Do Not Forget Your Eyes." The Gorgas Memorial Institute was organized to perpetuate the life work of the late Major General Gorgas in preventing unnecessary illness. Headquarters of the Institute are at 1331 G Street, Northwest, Washington, D. C., and Dr. Cary T. Grayson, is its president.

Dr. A. G. Coumbe,

Member of the Medical Society of Virginia, and for a number of years a resident of Washington, D. C., has retired from active practice and has gone to Fort Myers, Fla., for an indefinite stay.

Dr. James W. Reed,

Norfolk, Va., is home again after an operation for appendicitis, following which he was quite sick. He was taken suddenly ill during the all-day clinic meeting of the Norfolk County Medical Society and was unable to leave the hospital to which he had gone to attend clinics.

Fire Destroys Doctors' Building in Atlanta.

Early in April, fire of undetermined origin destroyed the Doctors' Building on Peachtree Street, in Atlanta, Ga. Approximately seventy-five doctors and dentists had offices in this building and it was estimated that the loss would be not less than half a million dollars in addition to valuable records. Part of the loss included about a dozen X-ray machines ranging in value from $5,000 to $25,000 each. Many of the doctors carried only small insurance on their equipment.

Dr. Leta J. White,

For five years with the Richmond (Va.) City Health Bureau, has just returned to Virginia after sometime spent in special work at the Children's Hospital, Philadelphia, and has located at 101 Liberty Street, Petersburg, Va. She will limit her practice to infants and children. Dr. White is a member of the class of '23, Medical College of Virginia.

Dr. and Mrs. I. K. Briggs

Have just returned to South Boston, Va., after sometime spent in New York, where Dr. Briggs has been taking a post-graduate course in surgery.

Dr. Victor K. Young,

Of the class of '27, Medical College of Virginia, after a service at Kings County Hospital, Brooklyn, N. Y., has recently located at Hotel Pennsylvania, New York City, as assistant house physician.

Third Graduate Fortnight.

The third annual Graduate Fortnight of The New York Academy of Medicine will be held from October 20 to 31, 1930. The general subject which has been chosen for this year is "Medical and Surgical Aspects of Acute Bacterial Infections."

The program as arranged is in two parts, coordinated afternoon clinics to be held in ten important hospitals of the city, and evening meetings to be held at the Academy. An added feature of this year's Fortnight will be an exhibit of anatomical, bacteriological and pathological specimens and research material bearing upon the various aspects of the subject.

Each of the hospitals cooperating in the Fortnight will present two afternoon clinical programs dealing with different phases of the general subject. The evening meetings will be held at the Academy of Medicine.

The list of speakers who have been invited to take part in the Fortnight includes prominent clinicians from many parts of the country who are recognized authorities in their special lines of work.

The profession generally is invited to attend. No fees will be charged for attendance at any of the clinics or meetings on the program. A complete program and registration blank for special clinics and demonstrations will be mailed on request sent to the Academy at Fifth Avenue and 103rd Street, New York City.

The American Association for the Study of Goiter

Has issued a preliminary program of its meeting to be held at Seattle, Tacoma and Mt. Ranier, Wash., on July the 10th, 11th and 12th. This program shows a list of thirty-four papers by foremost specialists in the treatment of goiter. Dr. J. Tate Mason, vice-president, an alumnus of the University of

Virginia, Department of Medicine, will be glad to answer any inquiries concerning this meeting, which may be sent to him at 1115 Terry Avenue, Seattle, Wash.

Twenty-Five Per Cent Increase in Health Examinations.

A twenty-five per cent increase in the demands for Health Examinations since October 15, 1929, when the Five County Medical Societies of Greater New York launched the Periodic Health Examination Campaign has been reported by the physicians of Greater New York.

As a result of a questionnaire sent to a representative cross-section of the city's physicians by the Greater New York Committee on Health Examination, and in response to numerous inquiries, the Committee has published a book to acquaint medical societies and other interested parties all over the United States and Europe with the procedure of the New York Campaign. To give all interested parties the benefit of its experience, the Committee is distributing 15,000 books to medical societies, health foundations, welfare organizations, and education groups throughout the United States and Europe.

The Kidney in Health and Disease.

The University of Minnesota has issued an invitation to a symposium on the Kidney in Health and Disease to be held at the University of Minnesota Medical School, Minneapolis, Minn., July 7-18, 1930.

There will be no registration fee. The University will try to provide dormitory accommodations at a reasonable price during the symposium if registration is made before June 1st.

All correspondence in regard to the symposium may be addressed to the Symposium, University Hospital, Minneapolis, Minn., or direct to Dr. Hilding Berglund, University Hospital, Minneapolis, Minn. The final program, including a brief synopsis of each lecture, will be issued before June 1st.

Dr. Henry S. Stern,

Richmond, has moved his offices to 807 West Franklin Street, he is limiting his practice to pediatrics.

Intensive Post-Graduate Course.

Professor Georges Portmann will give a five-week, intensive post-graduate course in ear, nose, and throat surgery, at the University of Bordeaux, France, commencing July 21, 1930. This course is open to American physicians.

For information, apply to Dr. Leon Felderman, Mitten Building, N. W. Cor. Broad & Locust Sts., Philadelphia, Pa. (*Adv.*)

What Price Babies?

From nothing at all to $692 was found to be the cost to parents of the luxury of having a baby in Columbus, Ohio, during the year 1928. The average amount for parents with an income of $3,000 or more was $270, for those with an income of $1,200 to $3,000 it was $129, and for those whose income was under $1,200 it was $64. Doctors' and nurses' fees and hospital charges used up a considerable proportion of these amounts. The investigator, a professor of sociology in the State University at Columbus, concluded that only well-to-do families and dependent families in that city have medical care at childbirth that approximates modern standards, and that parents of the various racial backgrounds would purchase medical care if they had the means to do so.

The School of Nursing of the University of Virginia Hospital

Is having its graduating exercises at 4 P. M., May the 8th. Dr. W. T. Sanger, president of the Medical College of Virginia, will give the graduating address. Dr. J. C. Flippin, dean of the Medical School, will present the graduating class to the president, Dr. E. A. Alderman, who will preside and present the diplomas. Miss Josephine McLeod is superintendent of nurses. This class numbers 44 graduates.

Information Desired.

Since the discovery of the Confederate Tunnels just outside of Petersburg, Va., recently the owners have been endeavoring to locate some of the old Confederate soldiers who took part in their digging, in order that the history of same may be properly recorded. They would also like to know by what regiment or in consequence of whose command or for what purpose the tunnels were constructed.

If any of our readers are in possession of any of the above information, it should be sent for a matter of record to David A. Lyon, Jr., care the Petersburg Battlefield Realty Corporation, Petersburg, Va.

For Sale—

Modern residence, office equipment, and a live practice in incorporated town in southwestern portion of State. Located in a thickly settled and prosperous community in the "Bluegrass" section. Very little opposition

XUM

and income will start at once. Located on N. & W., Eastern Bus Line, at intersection of two big State highways. Good telephone, water and electric service. Splendid churches, school and roads. In easy distance of good hospital service. Well equipped office, with very moderate rent. Home new, and equipped with hot water heat, water, electric range, lights and frigidaire. More detailed description on request. Excellent reason for selling. Price, $12,000 complete, one-half cash, and balance in negotiable paper. Will introduce. Do not answer unless you are a responsible party and mean business.

Address No. 230, care this JOURNAL. (*Adv.*)

For Sale or Lease.

Fireproof, brick hospital, modern in every detail, well equipped. Located in progressive community. Suitable for sanatorium or hospital of some definite type; another general hospital in town. Medical library and operating room fixtures, Kny-Scheerer sterilizers, etc., can be bought separately.

Write Mr. James H. Price, attorney for estate, Times-Dispatch Building, Richmond, Va. (*Adv.*)

Obituary Record

Dr. Mary Evelyn Brydon,

Director of the Bureau of Child Health of the State Department of Health, Richmond, Va., died on the night of April the 13th, after an illness of several weeks. Her death was due to complications following pneumonia. Dr. Brydon, known in private life as Mrs. George L. MacKay, was a native of Danville, Va., and fifty-one years of age. She first trained as a nurse and later took up the study of medicine, graduating in 1911 from the Woman's Medical College of Pennsylvania, at Philadelphia. She was first engaged in public health work in Danville, later becoming director of physical welfare at the Farmville, Va., State Teachers' College. She became connected with the State Health Department in 1918 and has, for the past few years, given her time entirely to child welfare work. She had been a member of the Medical Society of Virginia for some years. She is survived by her husband and several brothers and sisters.

Dr. Rawley Martin Witten,

Retired physician of Bluefield, Va., died at his home in that place on February the 26th. He was born in Tazewell, Va., in 185[illegible] and studied medicine at the College of Physicians and Surgeons, Baltimore, from which he graduated in 1880. Dr. Witten had been a member of the Medical Society of Virginia for about thirty years.

Dr. W. E. Oliver,

Elliston, Va., died at his home in that place on April 24th, after a few weeks' illness. He was a native of Halifax County, Va., and seventy-five years of age. He had been a practicing physician in Montgomery County for forty years, and had been a member of the Medical Society of Virginia for some years.

Dr. Junius W. Stephenson,

Of New York City, died of pneumonia at his home in Pelham, New York, on Saturday, March 8, 1930. His death was sudden and unexpected. He was the son of Dr. Junius W. Stephenson and Rosa Harrison Stephenson. He is survived by his widow who was Ruth Story Walther, of Canandaigua, New York, and two children, Junius W. Stephenson, Jr., and Walther Story Stephenson.

Dr. Stephenson was born at "Huntington," Prince George County, Va., on May 22, 1885. In his early childhood he moved to Petersburg where he was reared. He attended the public schools of that city, graduating from the Petersburg High School in 1903. He entered the Medical College of Virginia and received his degree of Doctor of Medicine in 1907, following which he served a general internship at the Memorial Hospital in Richmond, Va., for a term of one year and later was a member of the staff of the Southwestern State Hospital at Marion, Va. He was next associated in the general practice of medicine with his uncle, Dr. H. U. tephenson, at Toano, Va., for a period of time before he became a member of the staff of Harrison's Sanatorium on Long Island, New York. His interest in neurology was aroused by the work he did at this institution and while at the State Hospital at Marion. He then sought an appointment at the Neurological Institute of New York where he served an internship on the service of Frederick Peterson. After the completion of this service at the Neurological Institute, Dr. Stephenson became associated with and practiced neurology with Dr. Peterson, and Dr. Foster Kennedy, and their associates. He continued his association with the Neurological Institute as assistant in the outpatient de-

partment of that institution and also in the wards. He was gradually promoted to Chief of Clinic, and at his death he had risen to the staff position of Attending Neurologist, and a member of the Medical Board of that famous institution. He was an active member of the Section of Neurology and Psychiatry of the New York Academy of Medicine, having only recently concluded a successful term as Chairman of that Section.

Dr. Stephenson was a teacher of great inspiration, and he is remembered and revered by many students whom he taught both in the under-graduate department of the Cornell University Medical School where he was clinical instructor in neurology and as assistant attending physician on the Neurologic Service at Bellevue Hospital. As a teacher in the post-graduate school of the Neurological Institute his work was outstanding. During his life he published a number of medical works particularly in the field of organic neurology.

Dr. Stephenson volunteered for military service on May 21, 1918, and was called in active service as First Lieutenant of the Medical Corps on June 8, 1918. His first assignment was neurologist to Base Hospital No. 48 at Fort McHenry, Md. Shortly after this assignment he was promoted to the rank of Captain, June 15, 1918, and on July 4, 1918, he sailed for overseas on the S. S. *Aquitania* arriving at LaHavre, France, July 14, 1918, and was immediately sent to Roanne, France, with his Base Hospital with which he remained until they were ordered home early in 1919. On January 31, 1919, Dr. Stephenson was transferred to the Fifth Division as the Division Psychiatrist. He remained with this Division until it returned to the United States in July, 1919. In February, 1919, Dr. Stephenson was promoted to the rank of Major in the medical corps, and for a period of time he was consultant in neuropsychiatry to the Hospital Center at Mar Sur Allier. He was discharged from Camp Upton on October 5, 1919.

Dr. Stephenson was a member of the Phi Chi Fraternity, The Sons of the Revolution, Broadway Post No. 515, The American Legion, The Medical Society of New York, The American Medical Association, The Southern Society of New York, The Virginians of New York, Veteran of Foreign Wars, The Military Order of Foreign Wars, The New York Athletic Club, and The Free and Accepted Masons.

His associates at the Neurological Institute, at Cornell Medical School, and at Bellevue Hospital, the profession of New York City, his many patients, and his intimate friends and family in Virginia mourn the loss of this young man who had risen so high in medicine.

R. F. G., JR.

Doctor John Garnett Nelson: A Eulogy.

With deep realization of the sadness of their mission, the undersigned representatives of your president bring to the attention of this Academy the death of one of its fellows who has long occupied a conspicuous place upon our floor and within our hearts.

John Garnett Nelson began his life in November, 1872, in Fauquier County, Virginia, the son of Reverend Kinloch Nelson, D. D, rector of Leeds parish, later professor of the seminary at Alexandria. He was educated at the Episcopal High School at Alexandria, McGuire's University School here, and at the University of Virginia. After teaching for a time at St. Alban's School in Radford, he became a student of medicine at the University College of Medicine in Richmond, where he graduated in 1900. While he was working his way through the medical curriculum, he held a teaching position on the faculty of McGuire's School in Richmond.

Beginning his active practice of medicine in 1901, he continued at this work until a short time before his death. His interest lay primarily in the field of internal medicine, in which he soon acquired a degree of proficiency which won him general recognition. His qualifications as a teacher now had many opportunities within his chosen field, and to the demands of his growing practice he added distinguished service to medical education through his work at the college. Ultimately, he held a professorship in the department of medicine at the University College of Medicine, and later, also, at the present Medical College of Virginia, with which his alma mater finally became merged. Interest in the activities of various medical organizations naturally followed, and he was soon prominently identified with the affairs of several of them, and, especially, of the Medical Society of Virginia and the Richmond Academy of Medicine. The latter he served consistently and faithfully for many years; and whether from the president's chair, to which he was elected, or from the board of trustees, of which he was one of the first members, or from the floor upon which he frequently appeared in the presentation or discussion of papers, his counsel was always met with the utmost of thoughtful consideration by an Academy which early learned the value of his opinions and his judgment.

The World War broke into his life, as it did into the lives of many. He went into the service promptly and, with the rank of major, became chief of the medical staff of Base Hospital No. 45, more familiarly known as the McGuire Unit. For some months he was assistant chief of the medical service at Camp Lee, and there, through the devastating epidemic of influenza in 1917, he had a foretaste of the wholesale clinical problems that were to confront him later, on an even greater scale, behind the lines in Europe. In the middle of 1918 he sailed with his unit to France and was shortly, at Toul, in charge of the entire medical service of a hospital which almost immediately became flooded with casualties from the great American force concentrated upon that front for the first drive of the armies of the United States under their own officers and their own flags. For the next eight months his work lay here; and then, with the break-up of the armies, he started home, now a lieutenant-colonel and in command of the outfit.

XUM

Back in Richmond, he was soon engrossed in the affairs of the newly launched McGuire Clinic, of which he was one of the organizers and in which he was chief of the medical staff until his death. There now followed years of much activity in his professional work and steady expansion of his influence in this field. Aside from his share in the development of the great clinic of which he was a part, his most notable work, perhaps, was in the fight against tuberculosis. He was instrumental in the organization of the Richmond Tuberculosis Association, of which he was president, and devoted much time and thought toward the advancement of its objects.

Such, in brief, were his major activities and interests. How he met and discharged the duties that thus fell to his lot we know without recital. In the classroom, or as a teaching clinician at the bedside, he was admirably in his element; many members of the Academy were his pupils and will instantly and gratefully recall the fine force and intelligence of his reasoning. Into his own practice he carried that same high quality, and along with it a recognition of his responsibilities that was truly notable. By day or night, regardless of considerations of convenience or comfort, Garnett Nelson was ever the companion and guardian of his patient to any extent that need required. His contribution to his profession was distinct, not only in the high level set by his daily work, but in the written studies he presented from time to time. His mind was alert and investigative, his energy untiring, his unshakable adherence to conviction proverbial. This combination of attributes always made him a factor commanding serious reckoning in any medical discussion. Yet he was quick to admit the weight of an opposing argument, if it possessed any, and ready to see in others qualities that were so marked in himself—genuineness of heart, sincerity of purpose, common interest and loyalty in a great cause. To those who stood shoulder to shoulder with him during the stirring days of the Great War, came perhaps the best opportunity of measuring his real stature. The intimacy of such an association month after month, is something quite different from the casual and irregular contacts of civil life. Through this acid test with its continuous drain upon every element of human character and intelligence and endurance, Garnett Nelson came untarnished. He took his military duties seriously. He was, when circumstances required it, a stern disciplinarian, and exacted of others the same rigid regard for duty well done that was his own habit, but he possessed the rare ability to command not only obedience, but affection. And no greater testimonial to his worth will ever be recorded than the devotion of his fellow-officers and the feeling, almost akin to reverence, that permeated the entire command for this lovable soldier and officer.

Of his last illness, one writes with the hesitation that the majesty of impending Death enforces. And yet it cannot be passed without note that here, in this gathering darkness, Garnett Nelson rose to his greatest height. As a physician, he knew but too well that his days were numbered in spite of the reassurances of those who often uttered words they did not themselves trust, to keep some ray of hope before him. Months dragged along, and it was heart-breaking to some of his more intimate friends to watch him as he carried on through this stern reprieve. With indomitable determination that was always an outstanding characteristic, he not only faced this ordeal with a great spirit, but actually, for a long time, continued his work and approached his daily professional problems with all the vigor and inquisitive insight that might distinguish one who looked into an unthreatening future.

Ahead of him, in fact, lay certain objectives toward which he was reaching with the hope of accomplishment before the end came. Toward these he fought his way and attained most of them. Now and again, one took him unawares, and was conscious of the deep thoughtfulness and contemplation that lay underneath the surface. As a rule, one saw nothing beyond that surface—calm, purposeful, unruffled alike by pain or the knowledge of what awaited just beyond.

Finally, he had to stop. His will was compelled to yield to overpowering physical forces as he passed into a period of increasing suffering and disability.

Now, at last, he lies at rest. He walks no more among us. His familiar figure will not be seen again in this hall. But to us he has left the unfading memory of a forceful personality that lent dignity and distinction to this Academy; of a physician whose daily work expressed the loftiest ideals of our profession; of a friend and comrade whose loyalty shrank before no obstacle or sacrifice. As much can be said of few of us; more of none.

With this simple but heartfelt tribute to a life worthily spent, we bid him now farewell. May the peace that passeth understanding be his forevermore.

(Signed)

FRED. M. HODGES,
MANFRED CALL,
JOSEPH F. GEISINGER, *Chairman.*

A motion that the foregoing be adopted, that it be spread upon the minutes of the Richmond Academy of Medicine, that copy be sent the bereaved family, and that it be published in the VIRGINIA MEDICAL MONTHLY, was unanimously carried at a meeting held on April 8, 1930.

MARK W. PEYSER,
Secretary-Treasurer.

Dr. John Richard Adams,

Blackstone, Va., died at his home in that place on April the 22nd. He was a native of Lunenburg County, Va., and eighty-three years of age. Dr. Adams attended last year's commencement exercises at the Medical College of Virginia as its oldest living alumnus, having graduated from that institution in 1869. A committee of the College alumni association attended his funeral. Dr. Adams' wife and several children survive him.

Dr. Charles Eugene Rogers,

Covington, Va., died in Chicago on February 11th, his death being due to pulmonary edema, following myocarditis. He was sixty-five years of age and graduated in medicine from Bellevue Hospital Medical College of New York in 1880.

Dr. Richard Terrell Davis,

Fredericksburg, Va., died April the 16th, while on a visit at the home of his brother-in-law in Warsaw, Va. He was fifty-eight years of age and graduated in medicine from the former University College of Medicine, Richmond, in 1894. He is survived by his wife and a large family connection.